

# THE MEDICAL JOURNAL OF AUSTRALIA

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The Journal of the Australian Branches of the British Medical Association.

VOL. II.—8TH YEAR—No. 21. SYDNEY: SATURDAY, NOVEMBER 19, 1921.

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### MEDICINE AND THE LAW.<sup>1</sup>

By Neal Macrossan, M.A.,  
Barrister-at-Law, Brisbane.

At the outset I would like to remove any misapprehension that may exist amongst your members about the scope of this paper. Of course, it is not intended to be in any way a treatise on medical jurisprudence, firstly, because that would be much too large a subject to be dealt with in this kind of way and, secondly, because medical jurisprudence is really a medical and not a legal subject. In other words, it is much more medical than it is jurisprudence and its alternative name, forensic medicine, is a more accurate description of it. But it has been suggested to me that a few notes on matters in which doctors are likely in the course of their professional duties to be brought into more or less intimate relations with the law, would be useful to your members. And this suggestion is the genesis of my paper.

#### Expert Evidence.

A member of the medical profession is liable to come into direct contact with the law in various ways—none of them, I suppose, particularly pleasant and some of them decidedly unpleasant. But

the one which is most common and with which I propose to deal first this evening is that which arises when a doctor is called on to give evidence in a court of justice in his professional capacity as a witness for or against a person accused of a breach of the criminal law or for a party in a civil proceeding.

As a general rule, witnesses in our courts are only allowed to give evidence of facts of which they themselves have personal knowledge. But there are certain exceptions to this and one of the most important of these exceptions is that the opinions of skilled witnesses are admissible in evidence whenever the subject is one upon which competency to form an opinion can only be acquired by a course of special study or experience. It is by virtue of this exception that the opinions of medical men become admissible upon matters within their special department of human knowledge.

The principle on which expert or scientific evidence is admissible has been thus stated: "Scientific witnesses, as such, shall be permitted to testify only to such matters of professional knowledge or experience as have come within their own cognizance or as they have learned by their reading and to such inferences from them or from other facts provisionally assumed to be proved as their particular studies and pursuits specially qualify them to draw, so that the jury may thus be furnished with the

<sup>1</sup> Read at a meeting of the Queensland Branch of the British Medical Association on August 5, 1921.

necessary scientific criteria for testing the accuracy of their conclusions and enabled to form their own independent judgement by the application of those criteria to the facts established in evidence before them."

An opinion can only be given upon facts and before an opinion of an expert becomes admissible, the facts upon which it is based, must be either admitted or proved by the expert himself or by other witnesses in his hearing at the trial or they may be matters of common knowledge which require no proof. The importance of this distinction between opinion evidence and evidence of facts is very great and a simple illustration is provided by a case where medical evidence is called on the trial of a prisoner for a crime of violence. Here a doctor may be called to give evidence of his own observation of the physical condition of the person on whom the crime was committed, the nature of the wounds, etc.. This is direct evidence of facts. He will then probably be asked to give his opinion as to how the injuries were caused or may have been caused, what amount of force was requisite to cause them and so on. It is only in his capacity of an expert that such evidence is admissible at all. Of course, if he actually saw the assault, his evidence on this point would not be opinion evidence, but direct evidence of facts. He would give his evidence, not as an expert, but as an ordinary eye-witness. So much for the doctor who saw the injured person.

But other experts, who have not seen the injured person, may be called to give their opinions of the probable or possible causes of the injuries. Their opinions can only be given upon the facts relating to his condition that have been proved by other witnesses. Or hypothetical statements of fact may be put to them, upon which they may be asked to give an opinion. But unless the assumed facts are proved, the hypothetical opinion is, of course, of little value.

It may seem unnecessary to emphasize the point that opinion evidence can only be given on the particular subject on which the witness is an expert. But how easily the boundary may be over-stepped is illustrated by a case that occurred in Queensland not many years ago, in which a schoolmaster was charged before a magistrate with assaulting a pupil, the alleged assault consisting in corporal punishment, which was alleged to be unreasonable and excessive. The schoolmaster was convicted by the magistrate. In support of the complainant's case, evidence was given by a doctor, who described the child's injuries and gave his opinion of how they were caused. He went on to say: "I am of opinion that an amount of force had been used . . . such as would be unreasonable on account of the boy's age." This probably appears to you to be perfectly legitimate evidence. But its admission resulted in the conviction being quashed by the Supreme Court, because it was not an opinion on a matter of medical science, but upon a legal question, since the reasonableness or otherwise of the punishment was precisely the point which the magistrate had to decide. If the doctor had said that the punishment which caused the bruises, was likely to

be injurious to the child's health or was likely in the case of a child of that age to have other serious consequences, such as the infliction of considerable or lasting suffering, the evidence would have been unobjectionable, for those would have been opinions upon matters of medical science. But the opinion he gave was, in effect, an opinion that the schoolmaster ought to be convicted, not an opinion on a medical matter, but on the mixed question of law and fact that the magistrate had to determine for himself.

Another illustration of the proper limits of opinion evidence is provided by a very famous English case, that of *Regina v. McNaghten*. This case, to which I shall refer again later, is the leading English authority on insanity as a defence to a criminal charge. But, incidentally, to the main issue, a question arose for determination on the admissibility of certain opinion evidence. Several medical witnesses, who had been present during the trial and heard the whole of the evidence, but had no other means of forming an opinion on the matter, were admitted to testify that, in their opinion, the prisoner was insane when he committed the murder with which he was charged. In the House of Lords the propriety of admitting such evidence was discussed and a question on the subject was submitted, amongst others, to the judges. The latter gave as their opinion that a medical witness could not, in the circumstances set out, in strictness be asked his opinion of the state of the prisoner's mind at the time of the commission of the alleged crime or whether he was then conscious that he was acting contrary to law, or whether he was labouring under any and what delusions, because each of these questions involved the determination of the truth of the facts deposed to, which it was for the jury to decide, and the questions were not mere questions upon a matter of science, on which such evidence is admissible, but that, where the facts are admitted or not disputed and the question becomes substantially one of science only, it might be convenient to allow it to be put in that general form, though this could not be insisted on as a matter of right.

And in later cases the practice so established has been approved of as correct and followed. The direct question on the scientific point in dispute, as applied to the facts of the case under consideration, e.g., whether the prisoner was insane at the material time, is not allowed to be put. But the witness would be asked whether, assuming the facts deposed to, *aliunde*, to be true, they indicate insanity on the part of the prisoner. So, too, when any other fact has to be determined on medical evidence.

Any witness who is called to give evidence as an expert, must always be prepared to give the grounds or reasoning upon which his opinion is based. For, in serious cases in which there is room for a difference of opinion, his particular one most certainly will be strongly attacked in cross-examination. He is entitled to refer to recognized text-books to refresh his memory or to correct or confirm his opinion. And he will be well advised to renew his



acquaintance with the text-book doctrines on the questions before he gives evidence, because, if his ideas are in conflict with those of reputable text writers, he may generally rest assured that this will be shown during his cross-examination, with possibly disastrous results to the weight of his evidence, as well as to his own reputation, unless he is well prepared to support his own views. The expert witness is a person who seems always to be regarded with a certain amount of suspicion—that is, when he is called to give evidence in controversial matters. This suspicion has been crystallized in the humorous definition which classifies liars in ascending order of merit into liars, damned liars and expert witnesses. However unfair this may be to the expert, it is extraordinary how prone such witnesses are to become partisan through the mere fact of being called for one party or the other.

It has been observed that: "There is perhaps no kind of testimony more subject to bias in favour of the adducer than that of skilled witnesses; for many men who would not willingly misstate a simple fact, can accommodate their opinions to the wishes of their employers and the connexion between them tends to warp the judgement of the witnesses without their being conscious of it."

An even more sweeping condemnation of this kind of evidence fell from the lips of Lord Campbell, one of the most eminent of the Lords Chancellors of England, in the Tracy peerage case. Speaking of the evidence of an expert witness, he said:

I daresay he is a very respectable gentleman and did not mean to give any evidence that was untrue; but, really, this confirms the opinion I have entertained, that hardly any weight is to be given to the evidence of what are called scientific witnesses; they come with a bias on their minds to support the cause in which they are embarked.

The particular expert who was the subject of Lord Campbell's remarks and provided the occasion for his general condemnation of expert testimony, was not a medical man. But, unfortunately, cases are not wanting to show that his views, however exaggerated, have considerable foundation in fact in all classes of scientific evidence. The most striking examples occur in cases where damages are claimed against transport authorities for personal injuries sustained through accident (*e.g.*, in Workers' Compensation cases and the like). It is extraordinary what divergence there can be between the views of reputable practitioners on the seriousness and permanency of the plaintiff's injuries, according as they are called on one side or another. There seems a natural, though no doubt unconscious, tendency of witnesses to identify themselves with the cause in which they are called, and it would be too much to expect medical experts alone to be altogether free from this very human weakness.

#### Evidence as to Sanity.

One of the most common questions on which medical experts may be called on to testify is the sanity or otherwise of a person charged with crime. It is a defence to a charge of crime to show that the accused person was insane when the offence was committed, but insanity, in the view of the law, is a different thing from insanity as known to medical

science. Here in Queensland we have a criminal code, which defines with strictness the insanity which provides a good defence to a criminal charge. The definition is as follows:

A person is not criminally responsible for an act or omission if at the time of doing the act or making the omission he is in such a state of mental disease or natural mental infirmity as to deprive him of capacity to understand what he is doing, or of capacity to control his actions, or of capacity to know that he ought not to do the act or make the omission. A person whose mind, at the time of his doing or omitting to do an act, is affected by delusions on some specific matter or matters, but who is not otherwise entitled to the benefit of the foregoing provisions of this section, is criminally responsible for the act or omission to the same extent as if the real state of things had been such as he was induced by the delusions to believe to exist.

This appears, from the medical point of view, to be a distinct improvement on the English law on the subject. In England there is no criminal code and criminal law has to be found in a miscellaneous array of statutes added from time to time to what is known as the Common Law, as expounded by the judges in various cases. The rules concerning insanity as a defence to a criminal charge are generally considered to have been determined in *McNaghten's case*, a case to which I have referred and which was decided as long ago as 1843. In that case the House of Lords took the opinion of the judges upon a series of questions dealing with insanity and the answers to these questions have settled the English law ever since. The important difference between the law then laid down and the law of Queensland is that the latter recognizes incapacity to control one's actions as a form of insanity entitling the sufferer to the benefit of this defence. The answers of the judges in *McNaghten's case* make no reference to this aspect of insanity, nor does it appear to have been judicially recognized in any later case. Although it has generally been conceded that the rule in *McNaghten's case* is inadequate, all attempts to substitute a better definition have failed, partly because the medical profession itself was not in agreement on the question. Thus we find that in 1894 the Medico-Psychological Association instructed a committee of its members to report on the matter. The report of this committee was discussed at the annual meeting of the Association in 1896. After discussion, the report, as amended, was received and adopted. Its concluding amended paragraph was as follows:

Under the circumstances disclosed by their investigations, your committee, while not approving the doctrines and definitions contained in the judges' answers to the House of Lords in 1843, are at present unable to make any recommendations for the amendment of the law.

A statement of this kind is certainly not of much assistance to any legal reformer who is anxious to put an end to the apparent conflict between the medical and legal views of insanity that exists in England. For that purpose, the first essential would appear to be a substantial agreement of competent medical opinion on the criteria of insanity. The language of the report referred to seems to indicate that there is no such agreement.

Here in Queensland, however, we are better circumstanced. The provision of our code which recognizes "incapacity to control one's actions" as a form

of insanity sufficient to support a legal defence appears to be an extension of the English law on the subject, which goes a considerable distance towards reconciling the legal and medical positions, though there still may be cases in which a physician would consider a man insane that fall short of the strict requirements of the English law for establishing the defence of insanity. Many people, undoubtedly labouring under confirmed insanity, are conscious of the difference between right and wrong and also able to appreciate the consequences of their acts. But in practice I doubt whether there is so much difference between the legal and medical positions, even in England. The question is one which has to be determined by a jury, and I do not think that many instances occur in which a prisoner who would medically be regarded as insane, is deprived of the benefit of the legal defence. On the contrary, cases are not unknown in which the benefit of the defence has been somewhat generously (to say the least of it) allowed to persons accused of crime.

Temporary insanity may be produced by drunkenness or stupefaction by drugs. If this has been brought about without intention on the part of the prisoner, he becomes entitled to the benefit of the defence of insanity and not otherwise.

Where, however, a specific intention is one of the ingredients of the offence, drunkenness, however caused and whether partial or complete, may be taken into consideration in determining the question whether the prisoner had the intention required. This may often be a question of some nicety and certainly frequently gives rise to considerable difference of opinion.

#### Professional Secrecy.

A matter upon which erroneous views are commonly held by the non-legal public is the right of a medical man when called as a witness to refuse to disclose professional confidences imparted to him by his patients. It may be stated at the outset quite distinctly that no such right is recognized by the law. A medical witness is bound to answer any relevant question that is put to him (the question of relevancy being one for the judge) and the fact that to answer a question involves disclosing information imparted to the witness in his professional capacity or acquired by him in that capacity, is no valid reason for a refusal to answer. It may be that the reply carries the most serious legal consequences for the doctor's patient. It may serve to convict him of crime or seriously affect his pecuniary interest. Mere considerations do not affect the matter at all. Unless the doctor is prepared to subject himself to the penalties of contempt of court, he is bound to answer. Of course, if the answer would tend to incriminate the doctor himself, he can refuse to answer, for no one is compellable to be a witness against himself in a criminal matter. But the possible consequences of the answer to someone other than the witness is quite another thing. They give the witness no protection at all. A different rule of law prevails in many countries and the inviolability of professional secrecy is recognized, not only in the case of doctors, but also of clergymen. But the law of England and the law of Queensland is as

I have stated it. With us, the only variety of professional confidence protected is a communication passing between a client and a legal adviser in professional confidence and even this is subject to the exception that no communication in furtherance of a fraud or crime, whether the legal adviser is a party to or ignorant of the illegal object, is protected.

The duty of a medical witness to answer questions, even though they involve disclosure of professional confidence is a very different matter from voluntarily giving to public authorities information which has been professionally acquired. Here, as a general rule (and subject to particular statutory exceptions), there is no legal duty of disclosure. A person who knows that another has committed an offence, is not under any legal duty to act as an informer. Whether he is under a moral obligation to disclose his knowledge to the public authorities concerned with the detection of crime, is a question the answer to which must depend on the circumstances of the particular case and the conscience of the individual. There are cases in which the nature of the crime is such that the practitioner may feel that the duty of disclosure overrides his professional duty to preserve the confidences of his patient. There are other cases in which an opposite view might well be held. These are matters which each man must settle for himself.

Of course, there is a very clear distinction between merely not giving information which would or might lead to the detection of crime and actively doing something to assist an offender to escape detection. Any person who assists another who is, to his knowledge, guilty of an offence, in order to enable him to escape punishment, is what is called an accessory after the fact to the offence and is guilty of an offence himself of greater or less seriousness, according to the gravity of the principal offence. It has long been established (since the seventeenth century in fact) that the fact of a physician or surgeon professionally attending a criminal who is sick or wounded, does not amount to this offence, although he knows him to be a criminal.

At common law there was an offence known as misprision of felony, which consisted in concealing or procuring the concealment of a felony known to have been committed and appears to be founded on a duty to inform the King's officers of the commission of a felony and to differ from that of an accessory after the fact in that no actual assistance to the felon need be proved. As long as this offence existed, there would be an active duty resting on anyone who knew that a felony had been committed, to give to the public authorities any information which he had, that might assist in the detection of the offender. So that, for instance, a doctor who acquired such knowledge in the course of his professional duties, would be bound to disclose it. But the offence of misprision of felony has long been obsolete and no prosecution for it has occurred in England for very many years. So far as Queensland is concerned, if it ever existed here, it was definitely abolished when our criminal code was enacted, which put an end to all common law offences.

#### Notification of Infective Disease.

I have already mentioned that in some cases a duty of disclosure of information acquired professionally is imposed on medical men by statute. Important instances of this duty are to be found in the *Health Acts, 1900 to 1917*. Under those Acts every medical practitioner who has a patient suffering from venereal disease in an infectious stage, is bound to give notice of the fact in a prescribed form to the Commissioner of Health. Such notice, in the first instance, does not contain the patient's name and address, but if the patient, before becoming non-infectious, fails to consult the medical practitioner for a period of four weeks and the latter receives no notice from another practitioner that the patient has changed his medical adviser, then the original practitioner is bound to inform the Commissioner of Health of the fact and of the name and address of the patient.

In the case of other infectious or notifiable diseases as defined by the Acts, an active duty is also imposed upon any medical practitioner who attends upon or who is called in to visit a person suffering from any of them, upon the day on which he becomes aware of the nature of the disease or suspected disease, to give notice thereof in writing to the Commissioner of Public Health and to the local authority.

These are cases in which the legislature has decided that the interests of the community demand that the rule of non-disclosure of professional confidence shall be waived and very few, I imagine, will be disposed to cavil at the reasonableness of the exceptions made. Indeed, the conflict between the claims upon the doctor of his patient and of the community is more apparent than real. For it is in the interests of the patient as well as of the community that the legislation has been passed.

#### Forensic Medicine.

Such legislation marks a very advanced stage in the evolution of the relationship of medicine and law. An early, if not the earliest, step in that relationship occurred when the law called medicine in aid to assist in the detection of crime, as by determining whether a death had occurred from natural causes or from poison or violence, whether suspicious stains associated with a suspected person were human blood stains and so forth. Then, later, we find medicine called on to take part in the cause of the accused when mental derangement became recognized as affording an excuse for acts which would otherwise be criminal. To this is largely due the development of an important branch of the medical profession—that of the alienist. From this narrower association with the criminal law, whether in the detection of guilt or the vindication of innocence, medicine proceeded to a broader relationship with law in its civil jurisdiction in assisting in determining the rights of parties in litigation (as in cases where questions arise on the testamentary capacity of deceased persons).

The last phase, in which medicine is enlisted in the service of public health, as contrasted with the interests of individual patients, serves to illustrate a striking analogy between the functions of medi-

cine and law. The object of law is order—order in the political, social and economic life of the community. The object of medicine, too, is order—order in the physical life of the people. No doubt the ordinary routine work of either profession is likely to cause the practitioner to lose sight of these ideals in the necessity of concentrating on the task of the moment—the work that lies to his hand. But it is good to have ideals. Without them one is apt to despair. And the work of the member of either profession should benefit if he keeps in view the fact that the ultimate justification of both is their service to the community, each in its appropriate sphere, and that by co-ordination of their respective functions that service can best be rendered.

#### WARMED ETHER ANÆSTHESIA.

##### A REJOINDER.

By C. Dyring, M.A., M.B., Ch.B. (Melb.),  
Honorary Anæsthetist, Alfred Hospital and Women's  
Hospital, Melbourne; Anæsthetist to the  
Repatriation Hospital, Caulfield.

THE thanks of anæsthetists are due to Dr. Corlette for the time and trouble he has taken from a busy surgical practice to the consideration of this subject in *THE MEDICAL JOURNAL OF AUSTRALIA* of August 6 and 13, 1921.

As he has specifically mentioned the apparatus devised by me and described in *THE MEDICAL JOURNAL OF AUSTRALIA* of June 8, 1918, which has now been in continuous use by myself and others with most satisfactory results for almost four years, it has cost me much thought to bring into accord the fact that clinically the use of warmed ether vapour (as delivered by my apparatus) is such a decided improvement in the administration of anæsthesia and the conclusion that, according to Dr. Corlette's deductions, it is not only useless, but in his own words that "the anæsthetist who innocently and with the best intentions is supplying warmed air and warmed ether, is causing more heat loss to the patient than if he had delivered ordinary room air and cold ether."

That is that by my apparatus there is not only no prevention of the loss of body heat, but that that loss is actually greater than if ether by the ordinary open method had been used.

In an editorial in *THE MEDICAL JOURNAL OF AUSTRALIA*, commenting on Dr. Corlette's paper, emphasis is laid on this point by the statement: "The effect of warming is rather detrimental than beneficial" (in Class A apparatus).

The unfortunate Class A apparatus is not even given, by the writer of the editorial, the respectable euthanasia vouchsafed to it in a most kindly way by the author of the paper, for he says further on: "It (i.e., a warmed ether system) functions as a regulator or moderator of ether content in the air supplied and, what is probably of more importance, it is closely associated with a plenum system of aerating the respiratory organs. . . . Looking at it as a whole, I am sure it may well rank as a



most valuable improvement in the art of etherization."

I presume that in this he includes Class A apparatus.

I crave permission to examine the subject shorn of its mathematical embroideries.

I hasten to verify Dr. Corlette's statement that the water vapour in the air, pumped through the ether, is dried out (as he puts it) and I freely admit that at ordinary temperatures it can be seen at the bottom of the ether bottle as a tiny globule of water amounting perhaps to five drops per hour and that if the room temperature be low, as in mid-winter time, it appears as a small mass of ice about the size of a pea and that at times it freezes in the tube conveying the air, blocking the passage way, so that the tube, perhaps twice an hour, has to be lifted from the ether, warmed for a few seconds in the hand and the airway cleared by forcing air through.

All this I admit, so that I agree with Dr. Corlette that warm dried air and warm ether vapour are delivered at the end of the tube.

May I now be permitted to join issue with the author over the question of the loss of heat in the "Thermos" flask?

In my short article my words did not have the terminological exactitude of Dr. Corlette; but what was meant was this—the water in the large "Thermos" flask is at boiling point—the ether vapour (of which the specific heat is very low) absorbs heat most assuredly, but not to such an extent as to cool down the water in the "Thermos" so appreciably that it would lose its power of warming the ether vapour, even after a period of two or three hours.

As a matter of fact, the warmed air and ether vapour are delivered to the mask at a temperature somewhere about normal body temperature, as shown by many rough observations taken by me with the ordinary clinical thermometer.

Hence there is a very large reserve of heat in the "Thermos" for the air and ether to draw on.

Up to the point of the delivery to the patient of the warmed air and ether, I am in agreement with Dr. Corlette, except where he criticizes my statements about the loss of heat in the "Thermos," and I trust I have made plain to him my intention (loosely expressed) when I said: "The loss of heat in the passage of the ether vapour through the copper spiral is negligible."

Here, however, our paths diverge and here I think is a very serious flaw in his argument.

Putting it shortly, he states that the dried air absorbs water from the mucous lining of the lungs and thereby the patient loses body heat. Possibly this might be so if the tube were inserted into the mouth and the air-ether mixture were taken into the lungs and expired.

I am not prepared to say, however, that this loss is of so much clinical as of academic importance and in this connexion I will refer to Gwathmey's "Anæsthesia" (page 67) on the subject of "The Effect of Narcosis on the Body Temperature."

After mentioning the various theories, he states: "Whatever the cause of this loss of body temperature, it is interesting to note that even a fraction

of a degree of elevation of temperature of the anæsthetic agent above that of the room will have a marked effect in maintaining the body temperature of the patient."

The author's observations in this regard have been amply verified by those of Davis, both upon animals and upon human subjects.

In twenty-six patients anæsthetized with warmed ether vapour there was a loss of body temperature averaging  $0.29^{\circ}$  F. as against the loss of  $1.02^{\circ}$  F. in 40 cases anæsthetized under similar conditions with the open drop method. The shortest period of anæsthesia in which the temperature was noted was 40 minutes, the longest  $4\frac{1}{2}$  hours. The temperature was taken by rectum immediately before starting and immediately after the removal of the anæsthetic. He does not state if the warmed air had been moistened, but, as I contend later, any mechanical moistening of the air is unnecessary. If Dr. Corlette's deductions are correct, I tremble to think of the condition my patients should be in after an anæsthesia of two or three hours with much manipulation and exposure of internal organs and a continuous drain of body heat during the whole time. They should show physiological symptoms of extreme shock with the double factors at work, surgical shock and continued loss of heat, but the observations of Davis, as quoted by Gwathmey above, delete the second factor and lead me to the statement made before, that, even if there is a slight loss of body heat by the moisture absorption from the lung tissue, it is of more academic than clinical importance.

But the tube delivering the warmed ether and warmed dry air is fixed inside an ordinary anæsthetic mask covered with flannel and, in addition, I use a towel or even two small towels over the mask.

We have now over the patient's face a chamber receiving warmed ether, dry warmed air and the products of the patient's respiration,  $\text{CO}_2$ , and the moisture contained in the expired breath and my contention is that the warmed dry air will receive its requisite moisture of saturation in the mask, even allowing the importance that Dr. Corlette attaches to the moistening of the warmed dry air. The patient supplies the necessary moisture as a by-product of respiration and any subsidiary moistening is, in my opinion, unnecessary.

The  $\text{CO}_2$  imprisoned in the mask serves the very useful purpose of acting as a respiratory stimulant and it must be remembered that both it and the water vapour are exhaled at very little below body temperature, so that in the saturation of the warmed dry air there is little loss of heat at the expense of the patient.

This disregard of the exhaled moisture from the patient seems to me to be a very serious flaw in Dr. Corlette's deductions, even assuming that he is correct in emphasizing the importance of the saturation of warmed dry air, an assumption to a great extent negated by the observations of Davis quoted above.

The whole subject is intensely interesting, but these investigations come within the province of the physicist rather than that of the anæsthetist, who has not at his disposal the apparatus necessary for



the investigation. We both aim at the safety of the patient and the improvement of the art of anæsthetization and, while admiring the time devoted to the consideration of the subject and having pointed out the very vital flaw in his argument, I intend to continue its use and point out to my students the great advantages of warmed ether vapour over other forms of anæsthetization.

After using my form of apparatus for nearly four years, I can only confirm the conclusions as summarized in THE MEDICAL JOURNAL OF AUSTRALIA of June 8, 1918. With its use one never sees the condition so graphically described by Dr. Corlette on page 100. On the contrary, the patient's condition rather more resembles that of a natural sleep. After a prolonged operation, with much manipulation and exposure of internal organs, the patient leaves the table practically without shock and without requiring those adventitious aids to recovery so much disapproved of by Dr. Corlette. Post-anæsthetic vomiting is markedly diminished; this on the evidence of observant nurses. Post-anæsthetic lung troubles are almost unknown.

Gwathmey's experiments on animals show that it is at least twice as safe as the ordinary open ether administration.

There are also the subsidiary advantages that the operating theatre is not permeated with useless lost ether vapour and, as far as my rough observations go, I do not use more than 80 c.cm. of ether per hour—a very great consideration in hospital practice. Further, the whole apparatus packs into an ordinary handbag and costs but little.

Dr. Corlette's reputation as a surgeon is well known. When, however, he is tempted to leave his specialty to investigate the intricate subjects of physical chemistry, one is tempted to refer him to the old Latin proverb in the kindest spirit, equally as it would apply to me should I leave the realms of the art of anæsthesia and enter those of the physicist: *Ne sutor ultra crepidam*.

#### DIPHTHERIA AND ITS PREVENTION.<sup>1</sup>

By F. V. Scholes, M.D. (Melb.), D.P.H. (Camb.),  
Superintendent, Queen's Memorial Infectious Diseases  
Hospital, Fairfield, Victoria.

THE subject of discussion to-night is of great importance, not only because diphtheria is increasing and causing an increased number of lost working days to the community and not only because the toll of lives is fairly heavy, but also because in diphtheria there is the possibility of a proper investigation into epidemiology. In measles, whooping-cough and many other diseases this is difficult; in scarlet fever it is nearly impossible; but in diphtheria we have a world-wide disease of well-marked seasonal incidence and a reasonably stable organism capable of easy recognition and examination. We want to find out why diphtheria is increasing and we want to find out the cause of epidemics, not only of diphtheria, but of other infections. An

enormous amount has been written of late on meningococcal infection and on "pneumonic influenza" and it is to be feared that the greater part of it is labour lost. I shall not touch on this aspect further, beyond putting forward a plea that, as the pathologist and the bacteriologist appear to have come to a dead-end, a fuller recognition be made of the value of concerted, close research into epidemiology.

Is diphtheria actually increasing? Roughly, from 20,000 to 30,000 cases are now reported annually in Australia, many more than ten or twenty years ago, both actually and in proportion to population. The objection has been raised that, owing to better means of diagnosis and especially in the case of "carriers," cases are now diagnosed and notified that formerly were missed. This is no doubt true and thus a deduction must be made for this apparent increase. But that there is also an actual increase is shown by the fact that, notwithstanding the great improvement in treatment, the number of deaths has not diminished. The number for Australia during the years 1910 to 1919 varied from 555 in 1910 to 893 in 1916. Last year it was still over 800 and this year we may expect it to be higher. It appears to me that there is undoubtedly an actual increase of morbidity per 100,000 of population. Why is it increasing?

The easy and no doubt the fashionable explanation is that it is due to the increased motility of the human organism. Since the advent of the electric tram and the picture theatre, the child of to-day travels more often and longer distances and comes much more into contact with children from other localities. But against this we must set the better ventilation of schools and homes, less over-crowding, a higher standard of living and of education of teachers and parents. To my mind, the explanation is not enough.

Now the children who get severe diphtheria, roughly speaking, are children with unhealthy tonsils and post-nasal growths. Twenty years ago, roughly speaking, these children died. Now two-thirds of them recover.

The healthy child who gets diphtheria nowadays, recovers rapidly and the germs disappear from throat and nose rapidly. Of course, there are a few exceptions. The unhealthy child who recovers, becomes what is called a "carrier," often incorrectly. The discharge from the throat and nose persists, continuous or intermittent, and the child, as a rule, suffers from recurring attacks of mild clinical diphtheria. These children used to die; now they live and are the chief means of distribution of the disease. That is one reason why diphtheria is increasing.

Then, also, in the healthy child, the germs die out rapidly; in the unhealthy they persist. Is it not likely, then, that the diphtheria germ is gaining in virulence? It is fighting for its life, just as we and all other living things are. We are doing our best to fight it by making it carry on its battle without the paralysing influence of its toxin, that is, by the early injection of antitoxin. What is it doing? Depend on it, it is finding means to adapt itself to the altered conditions we are imposing on it. And,

<sup>1</sup> Read at a meeting of the Section of Preventive Medicine of the Victorian Branch of the British Medical Association on August 4, 1921.

unfortunately, those altered conditions allow it to grow and multiply in the throats of unhealthy children whom we now preserve and prepare for it.

Thus we have, as likely to cause an increase in diphtheria, a greatly increased aggregation, scattering and clumping together again, of groups of children, constantly varying, all over the country. Among them are these unhealthy sufferers from chronic or intermittent diphtheria, in whom it is likely that the germ is gradually becoming more virulent. These children have recovered from the diphtheria caused by their unhealthy throats and noses, have been turned loose again, still with their unhealthy throats and noses, and will pick up the bacillus again at the earliest opportunity. It is nobody's business to clear up that unhealthy condition. It is our business to consider ways and means, both of clearing it up and of preventing it.

We are a long way from our ideal, if we have to scoop out tonsils and post-nasal growths in order to minimize diphtheria. We have to prevent the unhealthy tonsil and the unhealthy adenoid vegetations. Are these conditions increasing and, if so, why? I should like to ask the older members present if, in their opinion, they are increasing. Bad teeth are, in the opinion of many, more common among children nowadays. Why? Is there some defect in our methods of dieting or in the quality of our food or water and can there be a connexion between the unhealthy condition of the teeth and that of the throat and nose? This is a question for the epidemiologist and he must have, to get his data, the co-operation of the family practitioner, the children's specialist, the school medical officer and the school nurse. We want to find out all the factors which are causing the increase of diphtheria and to attack those factors. I am one of those who believe that attacking the problem at the other end will never eliminate diphtheria; it must be done at this end.

In the meantime, what can we do? A short glance at the modes of infection will help us. I do not wish to under-estimate the importance of a clean milk supply, of good drainage and cleanliness. But, to my mind, nearly every case of diphtheria arises from more or less direct contact with another case of diphtheria, recognized or unrecognized. That is the common method and the rare method is from a healthy "carrier." Coughing and sneezing, the hands, the nose, the common use of slate pencils, drinking vessels and even hard boiled sweets all serve as the medium.

For the prevention of diphtheria, as affecting the community, then, the programme includes:

- (i.) Careful and thorough investigation of the causes of enlarged tonsils and adenoid vegetation and of dental caries.
- (ii.) Rendering unhealthy mouths, noses and throats healthy by inspection and treatment of children.
- (iii.) Education of parents and children in the direction of personal cleanliness and, above all, the prohibition of the common usage of utensils at school and in the home.

Time does not permit me to go into any detailed scheme of carrying out this programme. So far the whole community has been considered; now, what are our best means of prevention in the individual case, at home or at school?

When a case of diphtheria occurs in a house, the general thing recommended is:

- (i.) Disinfection.
- (ii.) Swabbing of contacts.
- (iii.) Prophylactic injection of antitoxin.

I do not think this will do. Each of these procedures presents a large percentage of error and with none of them would I experience anything like a feeling of security. In addition, a vast amount of time, sulphur, antitoxin and culture medium is wasted.

As an example, I would propose the following line of conduct instead. You are called into a home where there are four children of school age—A, B, C and D. A has diphtheria. Now examine the other three. B looks rather ill and pale, but is walking about. His throat shows no membrane, but he has a blood-stained nasal discharge and scabs in the nostrils or excoriation of the upper lip, a coated tongue, perhaps enlarged cervical glands and impetiginous sores on the lips or chin. He has diphtheria. If swabs are taken, they should be to confirm the diagnosis and after treatment has been begun. D looks well, has a healthy throat and nose, a clean tongue, is eating well and, in fact, appears to be in normal health. Do not bother about him, at any rate for the present. C has no nasal discharge, but has unhealthy tonsils and adenoid vegetations and is perhaps a little "off colour." It is to this child that you have to direct your attention. Do a Schick test. If the result of the test be negative, he has almost certainly had a mild attack of diphtheria. Take swabbings from his throat and see if he is still infectious. If the Schick test yields a reaction, then give him antitoxin as a prophylactic and, if possible, set about immunizing him with toxin-antitoxin or with a vaccine. The mere taking of swabs will, in the cases of D and C, tell you practically nothing, whatever the result may be.

Thus, A and B have diphtheria and are sent to hospital or isolated and treated elsewhere. C is looked after in the manner I have indicated. The healthy D should be examined at the end of another week and I think a swab should then be taken. It will probably not reveal diphtheria bacilli. If it does at that time and after the lapse of a week, he must be regarded as that rare being, a "carrier."

This example has been introduced to emphasize the importance of examination of contacts, as opposed to the mere swabbing of contacts. Under the conditions generally recommended, of immediate swabbing of all contacts, it would have been quite possible for no bacilli to be grown from the swabbings of B and C and bacilli to be recovered from D's throat. The unfortunate and comparatively harmless D would be isolated, perhaps in hospital, and the dangerous B and C let loose.

It is well to recognize the following more or less established facts:

(i.) Bacilli generally disappear rapidly from the throat of a healthy contact.

(ii.) In a healthy "carrier" of more than one month's standing, any bacilli found are generally non-virulent. I have seldom known of virulent bacilli in such cases.

(iii.) The dangerous disseminators of infection are children of the types B and C.

(iv.) Even in these cases results given by swabbing are most unreliable and no reliance can be placed on one or two failures to discover bacilli. I have seen instances where six swabs have been necessary to recover the bacilli and similar experiences have been reported from all over the world.

Finally, there is the question of wholesale artificial immunization. I am not in favour of this and would recommend that it be confined to the children of types B and C. Granted that these unhealthy children have their throats, mouths and noses made healthy by proper medical and surgical treatment and that they are further protected by immunizing with toxin-antitoxin mixture or with a vaccine or with both, I think it would pay the community better to allow the diphtheria germ to fight its own battle against the healthy throat.

I do not propose to enter into the side issue of the disinfection of so-called "carriers" who generally are not "carriers." What we want to do is to eliminate the child who can be infected by the diphtheria bacillus and be reinfected and reinfected. We want to prevent the unhealthy local condition, where it is present we want to remove it and we may supplement these two essentials by any of the latest methods of artificial immunization of properly selected individuals.

#### THE PREVENTION OF DIPHTHERIA.<sup>1</sup>

By Morris Jacobs, M.B., B.S.,

Medical Superintendent, Bendigo Hospital, Victoria.

On being asked by Dr. Scantlebury to place before you the methods adopted in country districts towards the prevention of diphtheria, I accepted with mixed feelings, as probably most of you are aware that prevention of disease in the country is not a thing to be proud of. The Bendigo Hospital has an infectious diseases department, consisting of two wards of twenty-two beds each, one ward being kept for diphtheria and one for scarlet fever. This accommodation is totally inadequate, as during the year we had 130 patients suffering from diphtheria in at one time and it was a great trial to endeavour to accommodate this number. We accept patients from the surrounding districts, some coming from eighty miles away. There is an agreement with the municipalities that the hospital authorities treat patients at a cost of 6s. per day. I think that this is a great flaw in the prevention of the spread of diphtheria, for this reason: Many of the patients we receive here are children of working people, honest enough and willing to pay anything in reason, but,

after a few days, when they hear that their children are doing well they wish to remove them, in spite of the fact that the children are still infectious, and, as there is no law that will allow me to keep the children in, I have to let them go. I have admitted many patients with diphtheria, who have undoubtedly been infected by these children. I really think that representation should be made to the authorities on this subject.

Looking at it in a fair-minded way, it is very hard on poor, honest people to have to pay to isolate their children, in order to protect the rest of the community. I certainly think the onus of treatment of diphtheria should be placed on the local health authorities and that a law should be passed to the effect that it should be illegal to make a charge or endeavour to collect fees from patients in the infectious diseases wards. This, I believe, is the method adopted at Fairfield, and I certainly think that this should apply to country districts as well.

During the last five years the patients admitted to the Bendigo Hospital have been steadily increasing in number and this year showed a marked increase. The total number of cases reported is 606, with 16 deaths, the percentage being 2.64%. Notifications are not sent to the health authorities in regard to patients admitted to the hospital until diphtheria bacilli have been grown from the throat. The patients are not discharged until two consecutive swabbings are shown to be free of bacilli.

For the last four years I have had many arguments with the local city council on the subject of the prevention of the spread of diphtheria, but up till this year I did not meet with any success at all, as they seemed quite content and looked upon the increase of cases as a foregone conclusion. This year reached a climax, so a meeting of the municipalities was called, in conjunction with the hospital authorities, and it was decided to ask the Central Board of Health to send up an expert to report on the best methods of relieving the condition. Dr. Featonby came to Bendigo and investigated the whole situation and his report coincided exactly with the conclusions to which we had come. I am glad to say that his recommendations have been adopted, for in February of next year a swabbing of every child in the Bendigo schools is to be undertaken, and that all "carriers" will be isolated until declared free from infection. I am absolutely certain that this scheme will be of the greatest value in checking the spread of the disease.

I approached Dr. Ffrost, the Health Officer of Marong Shire, to see whether he would take swabs of the throats of the children in the shire, with the consent of the council authorities. They readily agreed to this procedure and I examined 301 swabs from the nose and throat of the children attending the schools, with the result that 46 "carriers" were detected. I noted that I obtained in a large percentage of these cases an almost pure culture of diphtheria bacilli from the nose. The end result of this procedure was very gratifying, for, before this was adopted, we used to admit a considerable number of patients from this shire, yet, since these carriers have been detected and isolated, there has

<sup>1</sup> Read at a meeting of the Section of Preventive Medicine of the Victorian Branch of the British Medical Association on August 4, 1921.



been only one new diphtheria patient admitted and it is some weeks since the swabbing was done.

This result shows that if universal swabbing were done in country districts, it would mean that the incidence of diphtheria would be very much diminished and thereby a great saving in the finance and health of the community. In country districts very many prejudices have to be overcome in the treatment of diphtheria. A very common idea amongst lay people in the country is that antitoxin has a very deleterious effect on the heart and, in many cases, a subterfuge has to be adopted in order to be able to treat the patients properly.

I have also found that many medical men have a very decided objection to exhibit adequate doses of antitoxin in the treatment of diphtheria and, with few exceptions, do not make any attempt to see whether their patients are free from infection after clinical recovery. Unless stern measures are adopted to compel practitioners to be more complete in the treatment of their cases, you cannot reasonably expect to get the freedom from the disease which is the desire and aim of this Society. The Federal Government is going to equip a laboratory in Bendigo, so in future there should be no excuse for any practitioner to fail to avail himself of the opportunity of protecting the health of the community at large.

## Reports of Cases.

### MALIGNANT DISEASE OF THE HEAD AND NECK.<sup>1</sup>

By L. M. McKillop, M.B., Ch.M. (Syd.),  
*Honorary Surgeon, Mater Misericordiae Hospital, Brisbane.*

I AM exhibiting three cases to illustrate the cosmetic and functional results of very extensive operations for advanced malignant disease of the head and neck.

#### Endothelioma of the Parotid Gland.

CASE I.—Mrs. P., aged 58 years, consulted me on February 22, 1921, on account of a well-marked, irregular, fixed mass presenting on the left side of the cheek in front of the ear and extending well below the angle of the lower jaw. She brought a letter from Dr. W. E. Giblin, of Samarai, New Guinea, detailing that she had consulted him in April, 1920, complaining of irritation in the left ear and of a small hard swelling in the cheek. He had no opportunity of seeing her for a further nine months, when he found the mass had increased greatly in size, had become more fixed and was obviously a sarcoma of the parotid gland. He advised her to have the tumour removed without delay. When examined by me, I found that the facial nerve was parietic and the mass deeply attached. She was admitted to hospital and on March 1, 1921, was anaesthetized by Dr. Russell. With Dr. Thelander's assistance, I removed the whole of the parotid gland, tied off the external carotid artery and internal jugular vein and removed the upper half of the sterno-mastoid muscle and the upper and lower groups of deep cervical glands, the former of which were obviously infected. All the tissue removed was got away in one piece. You can see that no apparent disability is caused by the removal of one sterno-mastoid muscle; the range of movement of the head is quite unaffected. The patient made a rapid recovery and is still under observation.

Curiously enough, the patient's brother, aged 54 years, recently sought my advice for a small swelling in front

of the left ear and a feeling of irritation in the ear. An examination revealed a small, hard swelling in the region of the parotid gland. The mass, with the overlying skin, was widely excised under a local anaesthetic and proved to be a basal-celled carcinoma.

#### Myxo-Sarcoma of the Glands of the Neck.

CASE II.—Frank L. W., aged 52 years, was seen by me recently in Tambo, Central Queensland. The patient presented a huge swelling in the left side of the neck. It appears that in January, 1920, he first noticed a small lump about the size of a pea in the skin of the neck, just below the left ear. Dr. Walker, of Tambo, to whom he showed it, considered that it was a cyst and removed it under local anaesthesia. Within a few weeks it recurred in the scar. The patient then went to Rockhampton and had a large area of skin, including the growth, removed. Two months later it again began to grow. He then consulted another surgeon in Rockhampton, who diagnosed the condition as sarcoma and advised him to proceed to Sydney. There he saw two very prominent surgeons, both of whom told him the growth was inoperable. He was sent to the Coast Hospital and given radium and X-ray treatment without avail, after a small piece had been excised for diagnosis. The histological diagnosis was myxo-sarcoma. The patient then returned to Central Queensland. The growth then continued to enlarge slowly until the beginning of April, when it became hot and red-dened and enlarged very rapidly. When I saw him early in May, the patient had a huge mass occupying the left anterior triangle of the neck, involving the sterno-mastoid muscle. The growth was firmly fixed to the deep structures of the neck. It had all the signs of an inflammatory tumour so often seen in rapidly growing sarcomata of the body and face. It measured 17.5 cm. in length, 8.75 cm. in breadth and stood out about 7.5 cm. from the general contour of the neck. It was densely fixed to the sterno-mastoid muscle and was fluctuant in some parts and densely hard in others. I strongly advised the patient against operation. However, realizing the risk, the patient decided to come to Brisbane and was admitted to the Mater Misericordiae Hospital. On June 4, 1921, I subjected him to a most extensive operation, assisted by Drs. Clarke and Yoffa. The operation was commenced by cutting across the sterno-mastoid, just above the clavicle, and reflecting the muscle upwards to the bifurcation of the common carotid artery, where the external carotid artery was tied in two places and divided. The vagus nerve was then cleared and gently drawn aside and about 2.5 cm. of the internal jugular vein, to which a gland was adherent, was clamped, tied off and removed. Oblique skin incisions were then made to include the mass and the involved overlying skin. The lymphatic glands were then carefully dissected up from below and the dissection carried up within the confines of the skin incisions to the angle of the jaw. The submaxillary lymphatic and salivary glands were then dissected up, the facial nerve isolated and the whole mass of tissue removed in one piece by cutting through the lower portion of the parotid gland and clearing away the sterno-mastoid muscle from the mastoid process. No functional disability resulted from the ablation of one sterno-mastoid, in spite of the fact that the edges of the wound could only be made to meet by strongly rotating the face to the affected side and keeping it in this position for over a week. Since the operation the patient has had several therapeutic doses of X-rays, in the hope that any stray sarcomatous cells may be killed off. Owing to the specimen being unfortunately mislaid in the hospital laboratory, I am unable to show it to you.

#### Extensive Epitheliomatous Ulcer of the Side of the Face.

CASE III.—F. G., aged 39 years, consulted me on March 21, 1921, complaining of a large, painful sore in the right side of the face and of lumps in the neck below the angle of the jaw. His history was that he first noticed a small scab on the right cheek fifteen months before in Townsville. He was advised by a friend to "burn" it out with bluestone. This he did, until he found that the more he applied the caustic, the larger did the ulcer become. He then came to Brisbane and had the ulcer excised by a medical man, but in a few weeks the sore returned and

<sup>1</sup> Read at a meeting of the Queensland Branch of the British Medical Association on August 5, 1921.



the glands of the neck began to swell. He consulted Dr. Lockhart Spence, who referred him to me for possible operation. When I saw him the ulcer was found to measure 7.5 cm. in diameter, occupied practically the whole cheek and was immovably fixed by its base. The upper group of superficial and deep lymph glands were enlarged and hard and the facial nerve was paralysed. In April he was admitted to the Mater Misericordiae Hospital for operation.

After preliminary ligation of the external carotid artery, a very extensive dissection was carried out from below upwards. It involved the removal of the zygoma, temporal and masseter muscles, the parotid gland, the submaxillary salivary and lymphatic glands and all the glands lying along the carotid sheath. Much difficulty was experienced in filling in the enormous defect left by the operation. A flap was slid up from the neck and more recently a skin graft was applied to fill in a small area about the size of a shilling.

In spite of the mutilation, the patient retained some power of opening the mouth. From the pathological report of the specimen, it was learned that the tumour was an epithelioma.

#### MENINGITIS WITH PUTRID CEREBRO-SPINAL FLUID FOLLOWING SLIGHT TRAUMA TO THE BACK AND OPERATION FOR ADENOIDS AND LARGE TONSILS.

By William Dismore Upjohn, O.B.E., M.D., M.S.,  
F.R.C.S. (Eng.),

Honorary Surgeon, Melbourne Hospital; Honorary Surgeon,  
Children's Hospital, Carlton.

The patient, a girl, aged 12 years, whose medical history is here recorded, was admitted to the Melbourne Children's Hospital on December 19, 1920, complaining of severe pain in both loins, associated with fever. She had never been a robust child and had the reputation of being nervous and excitable.

There were three younger children in the family alive and well. The mother appeared to be a healthy woman, but the father for many years had been a dissolute alcoholic.

Since infancy the patient had suffered from frequent attacks of bronchitis and on three occasions within the last five years she had passed through severe attacks of pneumonia. The last attack, which was exceedingly severe and prolonged, occurred a year ago. She had never had tonsillitis nor any symptoms of urinary disease.

About November 7, while at play, she sustained some slight trauma to the lumbar region and a fortnight later she again hurt her back by falling backwards across a form at school. Since these minor accidents, she had complained frequently to her mother of discomfort and aching in the loins.

On December 7, a week after the last injury to the back, she was operated on at a hospital elsewhere for adenoids and enlarged tonsils. She did not seem well after this operation, though nothing definitely serious was noted, except that she complained of the lumbar pain being particularly troublesome on December 9.

On December 17 the pain in the left loin was severe and she had a rigor lasting twenty minutes; the temperature rose to 40.2° C. and she felt some pain in the left leg. The pain in the lumbar region soon became severe on the right side too. It was worse at night and was aggravated by movement of the spine. Urination was frequent and the urine was offensive and dark coloured. It contained a small amount of pus, but no blood was detected. The appetite was poor and she vomited on several occasions on December 17 and December 18, but not after admission to the hospital.

On December 18 she had another rigor and suffered from some mental confusion for about an hour and from slight delirium at night. Examination of the nervous system at this time discovered no abnormality, except brisker tendon jerks in the left lower limbs.

Examination on admission to hospital on December 19, 1920, revealed the following facts: The temperature was

37.8° C., the pulse-rate 132 and the respirations 28. The child lay on her back, with the limbs easily extended and the head turned to the right. The eyes were closed, except when she spoke and answered questions; but there did not appear to be photophobia. Her only complaint was of pain in the back and to a less extent pain in the sole of the left foot. The loins were tender to touch, slightly more so on the right. The spines of the upper lumbar vertebrae were distinctly tender. The back was held rigid and all movements in the lumbar spine were decidedly limited. The abdomen was not abnormal in appearance, except that it did not move well with respiration. On palpation, the upper half of the left rectus was held on guard. There did not appear to be any splenic enlargement. There was some tenderness on deep palpation of the kidney regions.

On December 18 some discomfort had been noted on palpation of the right iliac fossa, but on December 19 examination of the appendical region revealed no abnormality. Rectal examination revealed nothing unusual. No tendon jerks could be elicited in the left lower limb. The sole of the left foot was slightly hyperæsthetic and there was a blister over the ball of the left great toe. With these exceptions, nothing abnormal was found in the examination of the nervous system. There were no signs of interference with the cranial nerves; there was no head retraction, Kernig's sign was not obtained, the arm jerks were normal and the plantar reflexes were flexor in type. No anæsthetic areas were found. The tongue was dry and coated. The operation site appeared healthy. No abnormality was detected in the heart. Numerous rhonchi were heard in the lungs, anteriorly and posteriorly. The urine was now free from pus, but an occasional leucocyte and red blood corpuscle were noted in the deposit; also urates and occasional hyaline casts.

On the evening of December 20, the child's general state was worse. The temperature was 38.7° C., the respirations 40 and the pulse-rate 150. There was no alteration in the physical signs, except that the abdomen had become distended but not tender. She was still able to answer questions rationally.

A lumbar puncture was carried out at this stage and the result revealed the nature of the disease. The cerebro-spinal fluid escaped under pressure. It was turbid, light brown and as offensive in smell as the pus of an otitic or appendical abscess. The child died about eighteen hours later.

#### Pathological Examination.

The results of the pathological examination made by Dr. Reginald Webster may be summarized as follows:

- (i.) Diffuse purulent cerebro-spinal meningitis; internal hydrocephalus; pus in the ventricular system; tags of lymph on the choroid plexuses.
- (ii.) Temporal bone, middle ear and accessory sinuses of the nose devoid of evidence of infection.
- (iii.) Multiple pleural adhesions and large emphysematous lungs; no pus in the bronchi; no broncho-pneumonia.
- (iv.) Hypertrophy of the heart.
- (v.) Linear atheroma in the ascending aorta.
- (vi.) Enlargement and softening of the spleen.
- (vii.) Liver tough, large and congested with blood.
- (viii.) Kidneys large, of leathery toughness, congested. The capsules did not peel readily from the cortex; no gross suppurative pyelonephritis.

(ix.) The cerebro-spinal fluid and pus from the surface of the brain were examined microscopically. Attempts by aerobic methods to culture the organisms contained therein were unsuccessful.

The organisms contained in the cerebro-spinal fluid were intra-cellular and extra-cellular in distribution. There was an amazing variety of morphological types. Various forms of cocci predominated, but there were also large bacilli, short influenzal types of bacilli, spirochaetes and coccobacilli.

#### Comments.

The features of this case which appear worthy of comment are:

- (i.) The nature of the cerebro-spinal fluid.
- (ii.) The atypical clinical manifestations of meningitis.
- (iii.) The differential diagnosis.
- (iv.) The ætiology of the meningitis.

(i.) *The Nature of the Cerebro-Spinal Fluid.*—So far, the writer has been unable to discover a reference to meningitis with the production of foul-smelling fluid, apart from the direct infection of the meninges from anaerobically-infected war wounds and the offensive local collections associated with the intracranial complications of otitis media or sinusitis.

(ii.) *The Atypical Clinical Manifestations of Meningitis.*—There was an absence of some of the symptoms commonly associated with meningitis. The mental condition was good, except for mild nocturnal delirium. There was no distressing headache, no cranial nerve palsy, no head retraction, no Kernig's sign, no inequality or other abnormality of the pupils and no photophobia. Apart from the febrile reaction, the meningitis manifested itself only in the spinal pain and rigidity and in the sensory and tendon reflex changes of the left lower limb. The misleading early urinary symptoms would seem to be independent of the meningitis, except that they may indicate the lighter incidence on the kidneys of the same septic blood infection which affected the meninges so intensely.

(iii.) *The Differential Diagnosis.*—When lumbar puncture had been performed, the diagnosis was evident; but, prior to this, the following diseases had been considered as possible causes of the symptoms presented: pyelonephritis, retroperitoneal suppuration from an atypical appendicitis, acute spondylitis, acute myelitis. The pains in the loins, the rigors, the transient pyuria and polyuria were compatible with an acute renal infection; but the persistence of fever after the urinary signs had cleared up cast a doubt on such a diagnosis. Moreover, the neurological signs in the left lower limb could not be accounted for in this way. Retroperitoneal suppuration might account for many of the signs and symptoms present. Unusual types of appendicitis in children, no less than in adults, may appear with anomalous symptoms. Still, the sites of tenderness and the history were entirely atypical and the nervous signs could only be accounted for by supposing the sacral plexus to be implicated in the abscess. The physical signs were not in agreement with such a diagnosis. It was thought that an osteomyelitis of a lumbar vertebra, with pressure of the inflammatory products on the roots of the *cauda equina* might account for the lumbar pain, the spinal tenderness and rigidity and the neurological signs. A wider compression and a different grouping of symptoms would probably occur in acute spondylitis of the lumbar spine, which is a rare disease. The polyuria and pyuria would not be accounted for in this diagnosis. An acute myelitis might explain the neurological signs and the pain, but the signs would probably be bilateral, with a more extensive motor and sensory loss and interference with bladder and rectal control.

(iv.) *The Etiology of the Meningitis.*—The operation of removal of adenoids and enlarged tonsils is an every-day occurrence, which is rarely followed by untoward complications. Meningitis, of one type or another, is a common disease of childhood. Accordingly, the association, in this instance, of a common operation with a common disease does not imply that they are related as cause and effect. This child, however, had unhealthy viscera, was probably syphilitic and had shown a lowered resistance to respiratory tract pathogenic organisms, by repeatedly suffering from bronchitis and pneumonia. It seems reasonable to suppose that, in this patient, the blood stream may have again become infected by the same organisms, through the temporarily unguarded raw area at the operation site. Just as occasionally mild trauma may determine, in a pneumococcal septicæmia, that the primary local lesion will be an arthritis, a peritonitis or a meningitis, instead of the usual lung lesions of pneumonia, so, in this patient, the meninges may have been traumatized by the accidents at school and there may have followed spinal meningitis extending later to the cerebral meninges, instead of pneumonia, as in the preceding years.

For information concerning the family and past personal history of this patient and the early stages of her last illness, my thanks are due to Dr. Charles Perry and for the notes about her medical examination on admission to hospital to Dr. J. Mackay, of the resident staff of the Children's Hospital.

## TWO CASES OF ACUTE ABDOMINAL EMERGENCY.

By Geoffrey Owen, M.D.,

Surgeon to Camperdown Hospital, Victoria.

### I.—Bullet Wound of Abdomen with Multiple Perforative Injuries.

F.F., aged 14 years, was admitted to the Camperdown District Hospital on the afternoon of October 22, 1919, at about 3.30 p.m.. His brother gave the following history of the accident. The two boys were out cutting wood in the forest, when, just before their mid-day meal (the accident happened with an empty stomach), they disturbed a fox. The elder boy took a shot with his gun and partially disabled the animal, while the younger boy rushed up with his pea-rifle and, seizing it by the barrel, raised it in the air to finish off the fox with the butt, when the rifle went off, the bullet entering his body just below and to the left of the xiphoid cartilage. The boy complained of abdominal pain, but was apparently not greatly shocked. He was driven at once to Terang in a buggy, a distance of about twelve miles, where he was seen by Dr. Breton, of that town, who immediately sent him on by motor-car to me.

When examined at the hospital, he was not greatly shocked; the pulse-rate was 100 and the temperature 36.5° C.. He had vomited once in the car and again on admission. The abdomen was very rigid and showed a small punctured wound just below and to the left of the sub-costal angle. There was no respiratory distress, liver dulness was normal and the urine was clear. He was prepared for operation, which took place soon after four o'clock, i.e., just four hours after the accident.

The abdomen was opened by an incision over the left rectus; the small wound of entry was included in the incision and completely excised right down to the costal cartilages. Blood-stained fluid was met with at once on opening the peritoneum and a careful examination then disclosed the fact that the bullet, having passed through the costal cartilages, had inflicted the following injuries:

(i.) A through-and-through wound of the left lobe of the liver. This wound was oozing slightly, but there was no marked hæmorrhage.

(ii.) Two wounds of the stomach, the first one just below the lesser curvature and the second one just above the greater curvature, where a small branch of the epiploic artery was bleeding freely and was at once tied.

(iii.) Six punctures, i.e., three through-and-through wounds of the small bowel lying on the left side of the abdomen. The large bowel was apparently intact. There was a considerable amount of blood in the peritoneal cavity, but very little stomach or bowel contents. The peritoneum was cleansed as far as possible. The small punctured wounds apparently had allowed very little escape of fluids.

No further search was made for the bullet. As a matter of fact, it was subsequently discovered lying close under the skin, just above the left iliac crest, and was easily removed under a local anæsthetic. The missile in its course downwards and backwards must therefore have passed through the posterior abdominal wall without injuring any of the big vessels or structures there.

The stomach wounds were closed by two rows of catgut sutures, four of the six small punctured wounds of the bowel being closed by one circular suture, the remaining two, in which the mesenteric part of the bowel had been injured and one of the small mesenteric vessels wounded, requiring more attention. The abdomen was then closed, nothing being done for the small wounds in the left lobe of the liver. When working in various surgical teams in casualty clearing stations in France I have on several occasions seen bad punctured wounds of the liver do perfectly well and give rise to no subsequent trouble.

The boy pursued a perfectly normal course for six days, when the temperature began to rise steadily and some days

later a careful examination showed dullness and loss of breath sounds low down in the left axilla and an exploring needle drew off some offensive pus. A diagnosis of left subphrenic abscess was made and it was arranged to operate next morning; but, during the night, the boy vomited 300 c.cm. of offensive pus and, as the temperature had fallen to normal, it was decided to await events. Three days later the temperature again began to rise and the dullness in the axilla, which had disappeared, again showed up and gradually increased.

On November 13, i.e., three weeks after the accident, an exploring needle again showed pus and, as before, a rib resection was decided on, but again the boy forestalled this by coughing up about 300 c.cm. of offensive pus during the night and, under the circumstances, operation was again postponed. The boy was put on the verandah, placed on a liberal diet and inhalation of creosote, the result being that at the end of four weeks his fever had entirely subsided; the expectoration had disappeared and, though somewhat emaciated, he was rapidly gaining strength.

One can only presume that a considerable amount of blood clot must have been formed from the oozing hepatic punctures and that the clot, becoming infected, gave rise to a subphrenic abscess, which ruptured into the stomach and was subsequently followed by a supraphrenic infection and localized empyema, which ruptured into the left lung.

The boy was seen recently, when he was found to be in excellent health. He had gained 12.8 kilograms in weight. An examination of his lungs revealed nothing abnormal and there was no abdominal discomfort.

## II.—Hydatid of Omentum with Multiple Twist of Pedicle.

W.T., aged 51, was admitted to the Camperdown Hospital early in the morning of July 19, 1920, with the following history: On the morning of the previous day he began to suffer from abdominal pain, followed by vomiting, which caused him to stop working. During the day his pain became worse, increasing in intensity towards evening, and the vomiting persisted. His bowels were not opened and he was not conscious of having passed any flatus. He stated that for the last few weeks he had suffered from vague abdominal pain and discomfort; but the symptoms had not been sufficient to interfere with his work. He gave no history of any previous similar attacks, nor of any past serious illness of any kind.

On examination he looked ill and had a typical anxious abdominal facies. His temperature was 38.2° C., pulse-rate 110 and respirations thoracic and 28 per minute. The abdomen was extremely rigid all over. Tenderness was most complained of in the right lower abdomen, where some dullness was present. A diagnosis of acute abdominal mischief—quite probably appendical—was made and an immediate operation was decided upon.

An examination of the abdomen when the patient was under the anæsthetic and the walls relaxed disclosed a well-marked tumour lying in the lower segment of the abdomen on the right side and, on opening the cavity by an incision over the right rectus muscle, this tumour was found to be a hydatid cyst of the omentum about the size of a goose egg. The cyst wall was intensely injected and the pedicle twisted six times on itself. There was a considerable amount of blood-stained fluid in the peritoneal cavity. The pedicle was tied off well above the upper limit of the twist and the cyst removed.

A further examination revealed two more omental cysts, which were tied off in a similar way, and also two medium-sized cysts situated in the mesentery of the small bowel. Total removal of these cysts being impracticable, they were treated by incision over the adventitia, removal of the endocyst and closure of the incision by inverting sutures.

The after-history of this case was quite uneventful, the patient making a perfect recovery and leaving the hospital three weeks later. When seen a few days ago, he was quite well and doing hard work.

This case appears to me to be of sufficient rarity to warrant reporting. Doubtless some surgeons of much greater experience than myself have met a similar condition, but, personally, I have never seen or read of an exactly similar case to the one reported.

## A SCROTO-URINARY SINUS.

By T. S. Greenaway, M.R.C.S., L.R.C.P.,  
*Medical Officer in Charge of the Venereal Diseases Clinic,  
Brisbane.*

On June 8, 1921, the following curious case presented itself to me. It is the first I have met with in an experience covering a great many cases of gonorrhœa.

M.F., a male, aged 52 years, consulted me on June 6, 1921, at the Venereal Diseases Clinic, Brisbane, with a history of a gonorrhœal infection thirty years ago, a slight stricture six years later and an intermittent "morning drop" during the past five or six years. A constantly decreasing stream latterly forked was coupled with some frequency of micturition.

The only complication he had had of his old gonorrhœa was a left-sided orchitis, which had lasted some twelve or fourteen days and which had called for no operative measure.

Finding an almost impassable obstruction at or about the meatus, I passed the smallest Wyndham-Powell tube under local anæsthesia. The urethra was then gradually dilated with air, when my assistant drew my attention to the fact that the scrotum had greatly increased in size. I looked to find it as stated, fully stretched to the size of a bowls ball with air.

I invited my colleague, Dr. J. J. Harris, to see the patient. He also had never seen a case like it. I deflated the scrotum through punctures and we again observed the air passing from the urethra dilating the scrotum. I could not see the communication, as the urethra was full of red patches and follicular depressions. I could not make a close examination with the growing pressure on the scrotal covering. The sinus was evidently in the neighbourhood of the bulb and was possibly an extension of a Cowperitis which had worked its way through. There was no history of pus in the scrotum, nor of any tapping during the past thirty years.

## Reviews.

### THE ANATOMY OF THE CENTRAL NERVOUS SYSTEM.

AFTER a considerable lapse of time, "Anatomy of the Brain and Spinal Cord," by Dr. R. J. Whitaker, has appeared in a fifth edition. The author makes the following statement in his preface: "This little book, first written whilst I was a student, still, as formerly, pretends to no originality. Its one aim is and always has been to present in as clear and simple a manner as possible an outline of the central nervous system to the student, who, for the first time, is brought face to face with this most intricate subject and to furnish him to the best of my ability with those facts he will find most useful in his future work and which, let us trust, he will not have room to unlearn."

This outline comprises a description of the membranes, blood vessels and venous sinuses and instructions necessary for a dissection of the brain, in addition to an account of the intimate structure of the brain and spinal cord. The description is marked by clearness of expression and attention to the difficulties of students, but, on account of the limitations due to its small size, will probably serve more usefully in revision than as a means of approaching the subject for the first time. Both the old terminology and "B.N.A." terms are employed, which will prove an advantage to students and clinicians alike when the applications of the facts of neurology to the diseases of the nervous system is under consideration. Unfortunately, however, the value of the book as a guide to the later work of the student in the wards is lessened by the fact that the description of the various parts is not accompanied by an adequate account of their function. This is especially so in the case

<sup>1</sup> "Anatomy of the Brain and Spinal Cord," by J. Ryland Whitaker, B.A., M.B.; Fifth Edition, 1921. Edinburgh: E. & S. Livingstone; Crown 8vo., pp. 262, illustrated by 103 figures. Price: 12s. 6d. net.



of the thalamus, where the statement that: "The optic thalami are secondary terminal stations of sensory fibres, apprising us of sensations but not discriminating them" (page 170) is not sufficiently impressive to lay the foundation of the student's ideas upon these structures, so that he may be able to analyse intelligently the phenomena of the thalamic syndrome.

Similar remarks apply with equal force to the statement made in regard to the functions of the cerebellum (page 119), which is too indefinite for the purposes of the student.

In the main, however, the anatomical description consists of a clear statement, controversial matter being well omitted in a work of this nature. The tables summarizing facts set forth in the general text are of considerable value as a means of systematizing the reader's knowledge of the subject. Numerous diagrams illustrate this work and here also is shown a careful consideration of students' difficulties; but overcrowding of some of the plates has detracted from their value.

The concluding chapter consists of a short account of the main facts of the development of the nervous system. It is preceded by a co-ordinated description of the entire central nervous systems, which presents a general summary of the course of the various fibre-tracts and their connexions.

## University Intelligence.

### THE UNIVERSITY OF SYDNEY.

A MEETING of the Senate of the University of Sydney was held on November 7, 1921.

The following resolution was passed to be sent to Mrs. Murdoch as an expression of sympathy with her in her loss on behalf of members of the Senate:

The Senate of the University of Sydney desires to place on record an expression of the sense of loss which has been sustained by the University and the Senate by the death of Professor James Murdoch, M.A., Professor of Oriental Studies, and its appreciation of his wide learning and judgement and of his efforts which, had he survived, would have resulted in the establishment of a school of oriental studies, for which there is such an opportunity of need in Australia.

The following appointments, *inter alia*, were made:

Dr. A. S. Walker as Honorary Demonstrator in Pathology.

Dr. Holmes à Court as co-Examiner in Therapeutics and *Materia Medica*.

A letter was received from Dr. F. Antill Pockley, tendering his resignation as Lecturer in Ophthalmology at the end of the year. Dr. Pockley having occupied this position since its inception 35 years ago, it was decided to accept the resignation with regret and send a letter of thanks and appreciation for the good work done during the long occupancy of his office.

A proposal by Dr. Constance D'Arcy that the Great Hall be lit by electricity was referred to the Buildings and Grounds Committee for report.

## Naval and Military.

### APPOINTMENTS.

THE following information has been published in the *Commonwealth of Australia Gazette*, No. 88, of November 10, 1921:

#### Australian Military Forces.

##### FIRST MILITARY DISTRICT.

##### Australian Army Medical Corps.

##### To be Captain (provisionally)—

DAVID EDWARD ANDERSON BUCHANAN, 6th November, 1917.

##### Australian Army Medical Corps Reserve.

HONORARY CAPTAIN A. C. McARTHUR is transferred to the Australian Army Medical Corps Reserve, Second Military District, 1st November, 1921.

HONORARY MAJOR W. W. R. LOVE is retired under the provisions of Australian Military Regulation 152 (1), 16th November, 1921.

##### SECOND MILITARY DISTRICT.

##### Australian Army Medical Corps Reserve.

HONORARY CAPTAIN A. C. McARTHUR is transferred from the Australian Army Medical Corps Reserve, First Military District, 1st November, 1921.

##### Reserve of Officers.

##### To be Lieutenant-Colonels—

HONORARY MAJOR FRANK MARSHALL, C.M.G., and HONORARY CAPTAIN HUGH CORBETT TAYLOR-YOUNG, O.B.E., Australian Army Medical Corps Reserve.

##### To be Majors—

CAPTAIN EDWARD WILFRED FAIRFAX, Reserve of Officers. HONORARY CAPTAIN CLIVE NIGEL SMITH, Australian Army Medical Corps Reserve.

##### To be Captains—

HONORARY CAPTAINS CEDRIC WALTER WILBERFORCE MURRAY, WILLIAM GRAHAM OAKELEY, THORNTON FAIRBRIDGE and HONORARY LIEUTENANT ALBERT EDGAR CLARK, Australian Army Medical Corps Reserve.

##### THIRD MILITARY DISTRICT.

##### Australian Army Medical Corps Reserve.

THE temporary rank of Lieutenant-Colonel granted to HONORARY MAJOR H. D. L. MURRAY is terminated, 30th June, 1921.

##### Reserve of Officers.

HONORARY MAJOR D. BENNETT is transferred to the Reserve of Officers, Sixth Military District, 1st October, 1921.

##### To be Majors—

HONORARY MAJOR THOMAS CHERRY and HONORARY CAPTAIN CRICHTON RAUL MERRILLEES, Australian Army Medical Corps Reserve.

##### To be Captains—

HONORARY CAPTAIN JACK GARLAND SKEET, Australian Army Medical Corps Reserve, 1st January, 1920. (This amends the notification respecting this officer which appeared in Executive Minute No. 105/1921, promulgated in *Commonwealth of Australia Gazette*, No. 24, dated 17th March, 1921.)

THOMAS CAMPBELL MILNE.

HONORARY CAPTAINS ERIC MACALLAN GORDON-GLASSFORD, M.C., MAURICE McKENNA, HORACE ERNEST STEVENS and JAMES LESLIE DIGGLE, Australian Army Medical Corps Reserve.

##### FOURTH MILITARY DISTRICT.

##### Reserve of Officers.

##### To be Major—

HONORARY CAPTAIN JOHN WELLESLEY FLOOD, Australian Army Medical Corps Reserve.

##### To be Captain—

HONORARY LIEUTENANT HENRY CRESWELL DOIDGE TAUNTON, Australian Army Medical Corps Reserve.

HONORARY CAPTAIN LEONARD BELL COX, Australian Army Medical Corps Reserve.

##### FIFTH MILITARY DISTRICT.

##### Unattached List.

COLONEL A. T. WHITE, C.M.G., V.D., is transferred to the Reserve of Officers, 1st October, 1921.

COLONEL D. M. McWHAE, C.M.G., C.B.E., is appointed from the Reserve of Officers, 1st October, 1921.

##### Reserve of Officers.

##### To be Captain—

HONORARY CAPTAIN NORMAN NEWNHAM DAVIS, Australian Army Medical Corps Reserve.

##### SIXTH MILITARY DISTRICT.

##### Reserve of Officers.

MAJOR D. BENNETT is transferred from the Reserve of Officers, 1st October, 1921.

##### To be Captains—

HONORARY CAPTAIN HERBERT WILLIAM FRANKLANDS, Reserve of Officers.

HONORARY CAPTAIN ARTHUR ROBERT WATERHOUSE, Australian Army Medical Corps Reserve.



## The Medical Journal of Australia

SATURDAY, NOVEMBER 19, 1921.

### Shutting the Stable Door.

AUSTRALIA, as an island continent, has an immense advantage over many countries. Its frontiers are washed by the oceans and seas. In the olden days, when Australia was composed of independent colonies, the frontier problem in its relation to epidemic disease presented a real difficulty, as real as that of any of the continental countries of Europe or Asia. The Government of one colony was powerless to prevent that of the neighbouring colony from exposing the people of the former to risk of infection. With Federation came the solution of the difficulty. Coordination, union of interests, the creation of a new nation, these factors indicated the possibility of removing the artificial risk. All the colonies agreed from the first to hand over to the Federal Government the onus of keeping epidemic disease out of the country. Quarantine and its accessories would be useless unless uniformity of action and unity of control were guaranteed. It was probably not contemplated that in the prophylaxis of exotic diseases the Commonwealth authority should guard the sea coast and the borders between the States and the State Governments should be responsible for the necessary measures within the States. The idea of the introduction of uniformity and open coordination has never been carried into effect and as a result Australia has placed herself from time to time in the absurd position of an island continent which deliberately refuses to employ the natural advantages for its own protection.

Quite recently we pointed out that the epidemic of plague in Queensland has been allowed to spread because it was left to the local health authorities (we use the term in its legal sense) to stifle the foci of infection at an early stage. The failure of the Health Department to acquaint the Federal Department of Health of the presence of plague immediately it was discovered is another factor con-

tributing to the seriousness of the present position. The third element in the causation of the continued spread of the disease is the manner in which the rat campaign has been conducted. On October 3, 1921, the members of the Council of the Queensland Branch of the British Medical Association waited on the Chief Secretary for the purpose of discussing with him the means to be adopted to stem the outbreak. From the short summary of this interview, published in our issue of October 15, 1921, it will be gleaned that the Minister was reluctant to adopt any measures that might lead the people to realize the seriousness of the position. The dissemination of information concerning the symptomatology of plague was ruled out because it might lead to a scare. The people have been re-assured through the daily press and by other means that plague is far less important than influenza, that the present epidemic is only bubonic and not pneumonic, that if the people would keep their premises free of rats, there would be no further danger. This means that the Minister, being a politician and not an expert hygienist, sought to postpone the evil day when the people of Queensland and of the whole of Australia will realize that a very wide-spread and serious epidemic of plague has got entirely out of hand. The Minister clearly showed at the deputation that he and not his permanent official, the Commissioner of Public Health, was directing the operations and was responsible for the concealment of the facts during the first three weeks of the epidemic. From the statement of the Commissioner of Public Health, published in our issue of September 24, 1921, it is quite evident that the Department was aware of the suspected nature of the illness of the man who died on August 23, 1921, on the day of his death and that this suspicion was changed to certainty six days later when *Bacilli pestis* were found in the spleen of the guinea-pig inoculated with contents of the buboes of the man. It must therefore be assumed that the three cardinal mistakes which have led Australia into grave danger, can be attributed to the absurd system of vesting a lay politician with powers to conduct or misconduct a campaign of preventive medicine.

To-day infected rats are spread over one thousand miles of the coast of Queensland. These rats have

recently been driven from pillar to post. The ample haunts in the north have provided them with cover when a local hue and cry has been raised. There are two ways of attacking rats. The first is to employ gangs of inexperienced rat catchers, who kill a few and frighten the rest. This method has the effect of causing migration. If some of the rats are infected, the result must be the spread of the area of danger. Rats, unless hunted, do not usually wander far afield. If hunted, they will become unduly suspicious and will move from place to place until they meet with a relatively quiet environment. The second method is based on these facts. If rats are observed in a store or warehouse, the windows, doors and other openings are closed with as little disturbance as possible. Then all persons are required to leave the premises, after traps have been set. As soon as the place is empty of human beings, the whole is fumigated with hydrocyanic acid vapour. Not a rat nor a flea can escape. Economically the loss to the firm, having its premises closed for one, or at most two, days, is trivial. In a few weeks' time the community will learn that the cost of a serious epidemic is not trivial.

A public scare is at all times deplorable. But it is unjustifiable to permit the people to cheat themselves into the belief that there is no cause for apprehension. We warn the people of the Commonwealth that, owing to the stupidity of a half completed scheme of defence against exotic disease, they are now entering on a period of dire peril.

#### THE HOMES OF THE BRANCHES.

THE COUNCIL OF THE VICTORIAN BRANCH OF THE BRITISH MEDICAL ASSOCIATION has for some time had under consideration the question of erecting a more central and more suitable building than it possesses at present. A Building Committee has been working at this problem and has examined many sites and existing buildings which might find favour for the purpose. The present home of the Branch was originally the house of the Medical Society of Victoria. It is placed in an inconvenient situation and the accommodation is quite inadequate for so active a body. Recently arrangements have been made with the Board of Management of the Melbourne

Hospital for the holding of meetings of the Branch in the Pathological Lecture Theatre at the Hospital, as the Library in East Melbourne is too small for the large number of members attending the meetings. The Branch Council has shown increasing activity in organizing meetings which may be regarded as models of what scientific Branch meetings should be. The excellent judgement that has been displayed in the selection of subjects and of the readers of papers since the end of the war is remarkable and it is a matter of small wonder that the attendance has been increasing by leaps and bounds. This large and energetic Branch should have a home worthy of its position and attainments. The Building Committee has recently started negotiations for the purchase of a site in Collins Street of sufficient dimensions for an imposing and ample building. Inquiries are now being made whether the members of the Branch will be prepared to provide the necessary sum of money to enable the Council to secure the site and to erect the building. Debentures would be issued to secure the financial interests of those who subscribe the money. Since there can be no question concerning the soundness of the investment from a purely commercial point of view, it is evident that this stage of the business will be quickly dispatched. A well-conducted building, with professional chambers or offices on those floors not required by the Branch, can be run as a paying concern.

At present the Branches of the British Medical Association, as such, have no legal or constitutional power to raise money in this way nor to hold property. Some of the Branches in Australia have acquired special power by forming companies for the purpose. In Queensland the members formed a company, called the Queensland Medical Land Investment Company, Limited, and this company acquired a suitable building in Adelaide Street, Brisbane. The New South Wales Branch secured incorporation as a company some years ago and in its corporate capacity it has power to raise money by debentures for building and other purposes. The result has been the erection of one of the best buildings in the city of Sydney. The Branch has a large library and meeting hall on the first floor, in addition to excellent offices. The offices of THE MEDICAL

JOURNAL OF AUSTRALIA are on the fifth floor, together with the linotype and composing rooms. This building has proved itself a paying proposition. In South Australia the members formed the Medical Hall Company in 1914 and built the House of the Branch in Hindmarsh Square, Adelaide. This building embraces on the ground floor the fine Lister Hall, as well as the necessary offices for the Branch. So far neither the Western Australian Branch nor the Tasmanian Branch has adopted this expedient for centralizing their activities.

In a short time the constitution of the British Medical Association will be amended to enable the Branches in Australia to act with greater autonomy and to become incorporated under the *Companies Acts* of the several States without a sacrifice of their positions within the British Medical Association. When the necessary amendments of the Articles and By-laws have been effected, it will be within the power of any Branch to take advantage of this provision and, after having done so, to obtain a home of its own. The members should have access to a medical library and reading room, the property of the Branch of the British Medical Association. There should be in each Branch a centrally placed building with suitable accommodation for the largest meeting that may be held. The organization work of the Branches should be conducted in well-appointed and properly staffed offices, where records and documents of importance can be properly filed. Finally, each Branch should have a home where members can congregate for professional and social purposes. A good address is as valuable for an association as it is for an individual.

#### ABRUPTIO PLACENTÆ.

PREMATURE separation of a normally implanted placenta before the birth of the child at any time during the last three months of pregnancy is apparently one of the most serious complications of childbirth. As far back as the days of the ancient Greeks it was assumed that all cases of *ante partum* hæmorrhage were due to this cause. When, however, it became recognized that the majority of cases were due to placental implantation in the non-retractile lower uterine segment, the possibility of hæmorrhage being due to abruption of the placenta was entirely neglected. Towards the latter end of the eighteenth century the elder Rigby wrote "An Essay upon the Uterine Hæmorrhage which Precedes the

Delivery of the Full-Grown Fœtus" and for the first time a clear distinction was made between premature separation of the placenta and *placenta prævia*. In 1817 the Princess Charlotte, only child of King George the Fourth of England, died in her first confinement. It was stated that the cause of death was premature placental separation. This announcement stimulated the interest, both of the medical profession and of the populace, and led to the publication of a monograph by César Baudelocque on "*Les Hémorrhagies Internes de l'Utérus*," in which the author described many authenticated and unauthenticated cases of the complication. But among obstetricians there were many sceptics, who considered that the recorded cases were those of undiagnosed unavoidable hæmorrhage. In 1861, however, Braxton Hicks proved that accidental hæmorrhage from the placental site was a distinct entity and with all the emphasis of that great obstetrician he laid down the principles of diagnosis and treatment. In 1892 Storer, of Boston, collected from the literature records of 153 cases. In 1901, Holmes, of Chicago, suggested the name "*ablatio placentæ*," but the description "accidental hæmorrhage" remained the more popular. He insisted that Rigby's claims in regard to the frequency of the condition were correct and stated that minor degrees of separation occurred once in every two hundred labours and major degrees once in every five hundred. Modern opinion is swinging more and more towards the views of Holmes. It is recognized that, unless the placenta is carefully examined, many mild degrees of accidental hæmorrhage will be overlooked.

Recently Dr. Edgar Snowden, an obstetrician at the Columbia Hospital in Washington, has directed attention to this form of *ante partum* hæmorrhage.<sup>1</sup> He points out that the frequency of its occurrence is probably much greater than is generally realized and quotes the opinion of J. Whitridge Williams, who has stated his belief that it is a more frequent cause of hæmorrhage before child-birth than is *placenta prævia*. The unreliability of many statistics is shown by a comparison of those quoted by the author. The figures of the Sloan Maternity Hospital show that the frequency of accidental hæmorrhage at that hospital was once in every 104 labours; at the Rotunda Hospital, Dublin, one in every 92; at the Chicago Lying-In Hospital, one in every 600; while at the New York Lying-In Hospital not a single example of the complication was recorded in a total of 10,000 labours. These figures only prove the enormous possibility of error in statistics which depend on the diagnostic ability of the physician or surgeon.

We are told that the most recent investigations show that the condition is a "toxæmia of unknown nature." Apart from the inadvisability of using such a term as toxæmia when the presence of a toxin in the blood or in the uterus has not been demonstrated, the assumption that a toxæmia exists tends to obscure any valid investigation into the aetiology of the complication. In the year 1885 a German obstetrician, Winter, called attention to the fre-

<sup>1</sup> *Journal of the American Medical Association*, April 16, 1921.



quent association of nephritis with accidental hæmorrhage. Many authors have described the co-existence of albuminuria in as much as fifty per centum of patients. The effect of Winter's observation, which was itself correct, had the unfortunate effect of causing obstetricians to assign the same cause to the two conditions. It should be remembered that albuminuria of pregnancy is usually unassociated with accidental hæmorrhage and that not a few authors have in their series of cases failed to discover the presence of albuminuria to any marked extent. Trauma, endometritis and inflammatory conditions of the placenta and decidua have also been blamed as the determining factors of premature placental separation. While no proof exists that any one of these conditions is the responsible cause, investigation of these more or less tangible conditions is more likely to be fruitful in its results than unrestrained speculation on the nature of some imaginary toxin.

Dr. Snowden treads on firmer ground when he discusses the management of the complication. Treatment consists in immediate delivery by means of forceps or version or Cæsarian section, the adoption of immediate means to stop the hæmorrhage and treatment of the resultant shock and anæmia. When the bleeding is revealed, the prognosis is, perhaps, better. When it is concealed, the uterus becomes hard and tender and the fetal parts cannot be felt. If dilatation is not advanced, the best chance of recovery lies in the operation of Cæsarian section. In both concealed and revealed varieties the outlook is ominous, since almost every child and the majority of mothers succumb. Should the mother survive, the secondary anæmia and the shock and the danger of *post partum* hæmorrhage have to be respectively treated and avoided. Failure of the atonic uterus to retract adds a new peril to the mother's life.

The obstetrician, than whom no other member of the profession works under more difficulties and has more worries, prays hard that he be spared the terrors of a severe *ante partum* or *post partum* hæmorrhage. These dread complications test his skill and his courage to the utmost. *Placenta prævia* has lost much of its terror since the knowledge of its cause and treatment has become satisfactory. It is because accidental hæmorrhage is still a mysterious phenomenon that it remains one of the greatest trials of the obstetrician.

#### CARBON DIOXIDE ELIMINATION.

THE general practitioner of to-day pays little or no attention to the amount of heat produced in the body of his patient. He prescribes diets more or less empirically and estimates their effect in his patient by the alteration of weight, the general tone of the muscular system and the appearance of the patient. When the patient is suffering from a disease which is associated with a disturbance of the metabolism of food, the practitioner is satisfied to carry out a series of rough experiments without providing any control wherewith he could determine the physiological response to the dietetic or thera-

peutic measures employed. Moreover, he is inclined to ignore metabolism, except in conditions involving very profound disturbance of the nutritive balance. In the future it will be necessary to replace this haphazard method by a more scientific measurement of the heat production within the patient's body.

From time to time the subject of the measurement of the basal metabolism has claimed the attention of the readers of THE MEDICAL JOURNAL OF AUSTRALIA. It has been pointed out in these columns that, while the measurement of the utilization of food in the animal body and the production of heat can be carried out in those elaborate calorimeters in which the animal or person is required to reside during the whole course of the observations, indirect methods are open to the objection that they embrace an experimental error which varies within wide limits. In the first place, the formula of Du Bois of the body surface calculated from the ratio of height to weight has been criticized on many occasions. In the next place, the oxygen consumption on which the majority of indirect measurements of metabolism is based, is not necessarily reflected with accuracy in the amount of oxygen retained within the body, since the tissues have a considerable property of holding oxygen. In the last place, under certain pathological conditions the substances oxidized may not be completely combusted, with the result that the carbon dioxide elimination figure may not correspond exactly with the amount of oxygen consumed and the estimation of the heat produced in calories may be erroneous.

Dr. John T. King, junior, has recently endeavoured to ascertain whether the estimate of caloric value in basal metabolism based on the carbon dioxide output is as reliable as the estimate dependent on the measurement of the oxygen consumption.<sup>1</sup> He has studied this question with great patience and thoroughness on healthy men and women and has called to his aid a competent statistician, Mr. Raymond Pearl, who has examined the results of observations by numerous investigators from the mathematical point of view. It must be remembered that these calculations have been made on persons whose power of oxidation is presumably normal. The experimental error would be small in these instances. The author has further attempted to set up standard metabolism rates for the various age periods for each sex. The value of this work is obvious. If the figures presented can be accepted, and we can see no reason for doubt in this respect, medical practitioners would have available, in America at least, a table of normal metabolism with which the metabolic values in pathological conditions may be compared. It is impossible to convey in a short article the information on which the reader would be able to judge the significance of the calculated calories. The tables, which occupy many pages of the original article, must be consulted for this purpose. In one series of observations it appears that the average difference between the indirect calorimetric figures and the direct calorimetric figures amounted to 3.79%. The average difference between the calculation based on the meas-

<sup>1</sup> Bulletin of the Johns Hopkins Hospital, September, 1921.



urement of the carbon dioxide output and direct calorimetric calculations was 4.73%, while, when the estimate was made on the oxygen consumption measurements, the average difference was 5.70%. On the other hand, it was found that, when the figures were distributed according to the age of the subjects, the estimate based on the oxygen measurements was more accurate. Judged from the mathematical point of view, it seems that there is no material difference in the relative variability between the oxygen intake and the carbon dioxide output. Mr. Pearl further comes to the conclusion that the oxygen intake is not appreciably more highly correlated with the calorific output measured directly than carbon dioxide. In these circumstances, Dr. King is probably justified in suggesting that for clinical purposes indirect calorimetry should be carried out by measurements of the carbon dioxide output. He describes a simple and apparently efficient apparatus which has the advantage of cheapness and portability. It is an "open" apparatus and consequently the risk of respiratory infection is avoided. This work tends to bring indirect calorimetry within the scope of the general practitioner and must be commended for this reason. There is much to be learned from this form of investigation.

#### THE SIGNIFICANCE OF THE BUFFY COAT.

It has long been known that a buffy coat appears in venous blood withdrawn from man in the presence of some inflammatory affection. This buff-coloured layer of coagulated plasma appears normally in certain animals, e.g., the horse, and is always associated with a slow coagulation and a sedimentation of the heavy erythrocytes before the lighter leucocytes sink by their own weight. The appearance of a buffy coat in human blood formerly attracted the attention of physiologists and clinicians, but in more recent times it appears to have been somewhat overlooked. Hewson and Hunter, in the latter part of the eighteenth century, noted the association of its appearance with sedimentation of the corpuscles and delay in the clotting. In our own time it has been shown that the stability of the suspension of blood corpuscles depends largely on the negative electrical charge of the corpuscles. Quite recently it has been shown that there is a parallelism between sedimentation and agglutination of corpuscles. It would appear that a fuller understanding of the phenomenon of the formation of the buffy coat or *crusta phlogistica* may be of clinical importance. Every hæmatologist recognizes that the phenomenon is not uncommon, although few have troubled to ascertain the nature of the conditions with which it is associated.

Dr. H. C. Gram, of Copenhagen, has devised a more or less elaborate technique for the purpose of investigating the mechanism of its production.<sup>1</sup> For the purpose of this study he has found that in normal men the cell volume represents between 43% and 51% of the total volume of full blood and in women between 37% and 45%. Further, he found

that plasma of men contains an average of 0.27% of fibrin and the plasma of women an average of 0.29%. The extremes of normal fibrin measurements were 0.20% and 0.38%. Deficient fibrin was found associated with degenerative conditions of the liver. The average appears to have been 0.22%. Increased fibrin content was found in simple anæmia, polycythæmia, leucæmia, purpura, lobar pneumonia, uncomplicated morbilli, influenza, pulmonary tuberculosis, polyarthritis, nephritis, cafarhal jaundice and many other inflammatory and infective processes. He speaks of the condition of an increase in the fibrin content of the blood as hyperinosis. In normal pregnancy there is a tendency to hyperinosis from the beginning. The maximum increase is reached between the fifth and sixth month. Having determined the association between pathological conditions and hyperinosis, he found that sedimentation of blood cells occurs only when the fibrin content of the plasma is higher than normal or when the cell volume of the blood is lower than normal. Further investigation disclosed that the cell volume is decreased in some blood diseases, in certain infective processes, in cancer, in pregnancy and in polyarthritis. In the next place, he has shown that the difference in the sedimentation rate of citrated blood of men and women depends more on the difference in the cell volume than on the difference in the fibrin content. From an investigation of the phenomenon of the formation of the buffy coat, he is able to show that it is essentially pathological and that it depends on an acceleration of the sedimentation or a lengthening of the coagulation time. Sedimentation of the corpuscles appears to be a complex process. The sedimentation of the corpuscles takes place more rapidly when the fibrin content is raised; the increase in fibrin or its precursor, fibrinogen, gives rise to an agglutination of the cells, which determines the increased rate of settling.

Dr. Gram finds that the cell volume plays an important part in their ability to sink through the column of uncoagulated plasma. The evidence adduced in support of this contention is not as convincing as that dealing with the clumping of the blood cells. In the last place, he shows that temperature is important in this connexion. Sedimentation is accelerated in higher temperatures, as compared with the slower rate at low temperatures. Moreover, it is necessary in gauging the rate of sedimentation to recognize that one factor leading to an acceleration may be present simultaneously with another factor leading to a slowing. In regard to the coagulation time, it is known that three factors are of primary importance, viz., the platelet content, the constitution of the plasma and the temperature. It would seem that the buffy coat appears when coagulation is sufficiently delayed to enable the corpuscles to sink through the column of fluid. It is conceivable that the absence of cell agglutination may keep the cells in suspension, even when coagulation is long delayed, just as rapid coagulation may prevent heavily agglutinated corpuscles from having time to sediment. The study of this phenomenon has undoubtedly been furthered by the ingenuity of Dr. Gram.

<sup>1</sup> Archives of Internal Medicine, September 15, 1921.

## Abstracts from Current Medical Literature.

### SURGERY.

#### (218) Gastric and Duodenal Ulcers.

J. B. DEEVER (*Surgery, Gynecology and Obstetrics*, February, 1921) has described the surgical treatment and pathology of gastric and duodenal ulcers. Focal infection as a cause is insisted upon, the appendix being the chief offender. Excision is the treatment of choice, with the addition of gastro-enterostomy when marked hyper-acidity is present. The ulcers most suitable for excision are those on the stomach wall and the small ulcers on the lesser curvature. When the ulcer on the lesser curvature is comparatively near the pylorus and there is considerable induration, partial gastrectomy is indicated. Large callos ulcers at the middle or to the left of the median line of the lesser curvature, with extensive induration, are best treated by circular resection, end-to-end anastomosis and gastro-enterostomy to the pyloric side of the suture. Ulcers on the anterior surface can be simply excised and ulcers on the posterior surface can be excised through an incision in the anterior wall. Posterior wall ulcers adherent to the pancreas are attacked best through the gastro-hepatic omentum. Duodenal ulcers are radically treated only when in the first portion of the duodenum. Pylorotomy is here the operation of choice.

#### (219) Acute Empyema.

A. T. BAZIN (*Canadian Medical Association Journal*, February, 1921), in an article on the treatment of acute empyema, maintains that infected pleural effusions must always be aspirated, a large needle or cannula being necessary on account of the presence of large flakes of lymph. Open operation is definitely contra-indicated because, by producing pneumo-thorax, it causes embarrassment of the other lung and of the circulation, since atmospheric pressure is constantly exerted against the mediastinal partition. The development of frank pus, a pleural abscess, demands resection of the rib and drainage without delay, but by this time adhesions have formed and the risk of disturbing the mediastinum has passed. Drainage should be established in the most dependent part, gauze curettage of the walls practised and the drain should be removed early. By this means a cure with complete expansion of the lung may be effected in from eight days upwards. Aspiration should be used to relieve urgent symptoms. Radical operation is not an emergency treatment.

#### (220) Pericardiotomy for Suppurative Pericarditis.

EUGENE H. POOL (*Annals of Surgery*, April, 1921) reports a case of suppurative pericarditis in which pericardiotomy was performed success-

fully. The patient was a boy of nine years and the operation of pericardiotomy with thoracotomy for empyema was performed under ethyl chloride-ether anaesthesia. The great difficulty in these cases is the maintenance of drainage after the operation and the author recommends resection of portions of the seventh, sixth and fifth cartilages. The pericardium is thus opened at its lowest part, little risk to the pleura is involved, ample drainage is provided and thorough exploration is allowed. The Carrel-Dakin technique is recommended. The late results depend not only upon the extent and density of intra-pericardial and mediastino-pericardial adhesions, but also on the degree of myocarditis. Presumably the earlier the drainage, the less the myocarditis and possibly in the early use of the Carrel-Dakin treatment there will be less pericardial adhesions.

#### (221) Colopexy.

PIERRE DUVAL AND RAYMOND GRÉGOIRE (*La Presse Médicale*, March 23, 1921) have devised a method of fixation for the ascending colon. A vertical incision, 8 cm. to 10 cm. long, is made practically from the costal border parallel to and just outside the outer border of the right rectus muscle. A thread is passed through the anterior longitudinal muscle band of the colon at its hepatic flexure. The ascending colon is drawn inwards to the middle line so as to expose the posterior surface of its abnormal mesocolon. The posterior parietal peritoneum is then excised over a triangular area, the external side of the triangle being vertical and the upper horizontal. The colon is then fixed by sutures from the posterior longitudinal band to the psoas and quadratus muscles, so that it will adhere to this raw area, and the vertical edge of the parietal peritoneum is sutured to its external surface. The transverse colon is fixed to a similar raw surface on the posterior surface of the anterior abdominal wall.

#### (222) Peptic Ulcer Following Gastro-Enterostomy.

JOHN F. ERDMANN (*Annals of Surgery*, April, 1921), while admitting that the most common cause of peptic ulcer following gastro-enterostomy is the use of silk or Pagenstecher's thread for suturing, includes among other causes the use of badly applied clamps, the taking of hot food and drink and infection with syphilis. The symptoms are very similar to those of duodenal ulcer, but are more intense. X-rays have so far not been satisfactory in assisting in the interpretation of the secondary ulcer. The treatment is essentially that of the primary disease. Good medical treatment, if ineffective, should be followed by prompt surgical attention. The original site should be inspected for recurrences and all adhesions should be liberated and induration and excoriation sought for. The ulcer should be thoroughly excised and a new anastomosis should be made.

#### (223) Traumatic Exophthalmos.

A. CAUCHOIX (*Bulletin et Mémoires de la Société de Chirurgie*, February 2, 1921) reports a case (the patient's age is not stated) in which pulsating exophthalmos occurred four weeks after a fracture of the base of the skull. Three days later ligation of the common carotid artery on the same side was performed, but on the same evening slight pulsation recurred and became progressively worse. Two months after the first operation the common carotid artery on the opposite side was tied. There were no ocular and no cerebral disturbances. No pulsation had recurred three weeks after the second operation and the exophthalmos was diminishing slowly. Ligation of one common carotid artery seems to give relief in half of the cases. Exophthalmos sometimes cures itself spontaneously, but relapse is not uncommon. The only resource left after ligation of both common carotid arteries is ligation of the orbital veins.

#### (224) Cystico-Choledochostomy.

M. R. RED (*Annals of Surgery*, April, 1921) recommends drainage of the common duct through the cystic duct instead of through an incision in the common duct. The name given to this operation is cystico-choledochostomy. If an incision has been made into the common duct, it is sutured, but before suturing it, the surgeon should introduce the rubber drainage tube through the stump of the cystic duct (cholecystectomy having been performed) into the common duct. It is maintained in place by one stitch of common catgut. Prolonged leakage of bile is thus averted. The tube, if properly fitted, may function for weeks and will convey the bile without peritubal leakage to the surface. The patency of the common duct may be tested by temporarily clamping the tube. On removal of the tube the discharge of bile throughout the fistula ceases either immediately or within a day or two, provided the common duct is not obstructed.

#### (225) The Surgery of the Pituitary Gland.

ARNOLD K. HENRY (*Dublin Journal of Medical Science*, April, 1921) discusses various methods of approach to the pituitary gland and maintains that removal of a pituitary tumour by any of the intra-dural routes is an exceptional possibility, owing to the anatomy of the part. He therefore emphasizes the value of the trans-sphenoidal route and eliminates to a large extent its difficulties and dangers by the careful use of radiography and of a special instrument. Radiography not only supplies the relations of the fossa, but, with the special instrument, guides the surgeon infallibly to his goal. Since continuous radiographic control is impossible, sufficient intermittent control is provided by the taking of successive radiographic negatives. The operation is carried out in an X-ray room under a combined rectal and novocain adrenalin anaesthesia.

## GYNÆCOLOGY AND OBSTETRICS.

## (226) Abdominal Pregnancy Resulting in a Living Child.

E. C. MOORE (*Surgery, Gynecology and Obstetrics*, July, 1921) records a case of abdominal pregnancy which progressed to full time. The woman was delivered by abdominal operation, the child being born alive and well. The patient, 29 years of age, was pregnant for the first time. At six weeks severe cramp-like pains occurred in the lower abdomen and continued for two weeks, when she was seized one morning with excruciating pains in the lower part of the abdomen. She felt very faint and vomited. Operation was advised and refused. After remaining ten days in bed, she almost ceased to complain of pain. There was slight vaginal bleeding during the second and third months. At the end of the eighth month a surgeon was called in. The position of the child seemed abnormal and the cervix was small and undilated. Abdominal section was decided on. At operation the omentum and small intestine were found to be adherent to the anterior abdominal wall. After separation of the adhesions a large mass covered by small intestine and omentum was found. It showed signs of recent inflammation and was covered with lymph. The mass had the appearance of a cyst with a twisted pedicle. The veins in the omentum were decidedly enlarged. The size of the uterus was about that of a three months' pregnancy and was pushed to the left by this mass. The mass was attached to the posterior surface of the right broad ligament and to the lateral pelvic wall. It also extended upwards toward the liver, being attached to the omentum in this region. The colon was free from any attachment. The umbilical cord extended to the left upwards under the spleen, where the child was found free among the intestines, not surrounded by any sac. Clamps were placed on the broad ligament below the attachment of the placenta and the entire broad ligament, with the placenta, was removed *en masse*. The child was a girl weighing 2.5 kilograms. She had no deformities. Five years later both mother and daughter were well. The author states that his case makes the twenty-first of all authentic cases in which it is positively certain that the mother survived and the child lived for at least one year.

## (227) Ovarian "Hypernephroma" and Luteoma and Suprarenal Hypernephroma.

E. GLYNN (*Journal of Obstetrics and Gynecology of the British Empire*, Spring Number, 1921) states that nearly forty years have elapsed, since Grawitz first propounded the theory that certain renal neoplasms were developed from misplaced "rests" of the adrenal cortex. These neoplasms were subsequently named hypernephromata. Pelham (1899) described a large solid tumour of the ovary which, on account of its macroscopic and microscopic appearance and the supposed occurrence

of suprarenal cortical tissue in the ovary, he called "hypernephroma." Several other cases of this sort have since been published. In the last few years, however, the ovarian "hypernephroma" theory has been abandoned by many authorities who believe that these tumours are derived from lutein cells or at least that they are not derived from the suprarenal cortex. From a careful study of all the available material, Glynn concludes that it is very doubtful whether a single case of genuine ovarian "hypernephroma" has yet been recorded. For this opinion he advances a number of additional reasons which so far have escaped the notice of critics. (i.) Suprarenal cortical tissue is frequent in the broad ligament, yet there is no proved case of its presence in the ovary. (ii.) The large ovarian "hypernephromata" are unlike the large primary (and usually malignant) growth of the cortex of the suprarenal gland itself; but, clinically and structurally, they are usually like other large tumours described as lutein growths. (iii.) The large ovarian "hypernephromata" are not associated with changes in secondary sex characteristics, e.g., hirsuties, which are so frequent with suprarenal cortical tumours in young children, especially girls, and in women before the menopause. These sex changes, on the other hand, never occur with lutein tumours. There is, however, one case on record of the much rarer hypernephroma of the broad ligament—a locality where accessory suprarenals are common—which did cause changes in sex characters and histologically appeared like a true suprarenal hypernephroma.

## (228) The Origin of Tumours of the Ovaries.

W. E. GOODALL (*Surgery, Gynecology and Obstetrics*, March, 1920) has investigated the origin of epithelial tumours of the ovary and, as a preliminary, devoted much time and painstaking work to determine the origin of the epithelial structures of the ovary, most of which are represented in the mature organ only by "rests" due to malformation or more generally to an arrest of normal retrograde changes. The material which he investigated, consisted of human ovaries in all stages of development as well as those of various lower animals. The ovaries of the bitch and cow were found to be especially useful, for in them the foetal structures persist largely to maturity. However, he found this persistence of epithelial structures to vary widely, not only between different species, but in various individuals of the same species and even in the two ovaries of the same individual, especially the human. That real tumours develop from Graafian follicles is doubted by Goodall, who agrees with Nagel that "hydrops folliculi" represents nothing more than unusually large healthy follicles. He also doubts whether the follicular cells of primordial cell nests ever give rise to tumours. The pathogenesis having been established by many investigators, especially Loeb, the origin

of dermoids and teratomata from ova seems established, teratomata having been found only in those locations in which aberrant ovarian rests are at times encountered. Since peritheliomata occur eight times more frequently than sarcomata in the ovary, Goodall assumes that they originate from the interstitial cells which occupy a position morphologically between the epithelial and connective cells.

## (229) Vaginal Operations for Prolapse.

F. H. LACEY (*Journal of Obstetrics and Gynecology of the British Empire*, Summer Number, 1921) reviews the work done in the Manchester School from 1914 to 1916. A series of operations was undertaken to determine whether prolapse of the genital organs could be treated satisfactorily by operations *per vaginam*. Seven hundred and fifty patients were written to four to six years after their operations had been performed. Of these, 521 replied. Of the patients who replied, 455 (87%) stated that the womb kept up well. Of the remainder, 29 were examined. Seventeen of these had some degree of prolapse. There was one case of procidentia in a woman of 75 years who suffered from chronic bronchitis. Two were delivered within twelve months of the operation. The remaining ten patients of the 29 examined had no prolapse, but had other conditions not associated with the genitalia. The author considers that the proportion of successful operations was 90%. In those of reproductive age 330 women whose operations were successful, bore 67 children, instruments having been used in 32 instances. The 33 women whose operations were failures, bore 16 children, instruments having been used in 62%. There was one death in the series.

## (230) Syphilis in the New-Born.

F. J. BROWN (*Journal of Obstetrics and Gynecology of the British Empire*, Summer Number, 1921) investigated the pathology of twenty-one cases of syphilis in the new-born. They were all cases of post-natal death. The duration of life varied from a few moments to forty-two days, but the majority of the infants died at about the end of the first week. None of the mothers had undergone adequate treatment during pregnancy. The *Spirochæta pallida* was found in only two of the fresh fetuses. Enlargement of the spleen was found in only five of the series. Chondro-epiphysitis was found in only one case. The placenta of the full-time fresh syphilitic fetus shows in most cases few changes to naked eye examination. In the majority of cases histological examination of the foetal organs, especially the thyroid gland, thymus, lung and liver, is necessary before any decision can be arrived at that the condition is, or is not, syphilitic. In the absence of a Wassermann reaction given by the mother's blood and in the presence of a suspicious obstetrical history, histological examination usually affords conclusive evidence that the child has been infected with syphilis.



## British Medical Association News.

### SCIENTIFIC.

A MEETING of the Queensland Branch of the British Medical Association was held at the B.M.A. Rooms, Adelaide, Street, Brisbane, on August 5, 1921, Dr. A. GRAHAM BUTLER, D.S.O., the President, in the chair.

#### Malignant Disease of the Head and Neck.

Dr. L. M. McKILLOP read the notes of three cases of malignant disease of the head and neck and presented the patients (see page 456).

#### Foreign Body in Tracheal Wall.

Dr. W. CROSSE exhibited a skiagram and a hypodermic needle. A girl, aged 11 years, had had an injection into the gums at the Dental Hospital. While the injection was being carried out, the child swallowed the needle. The skiagram revealed that the needle had lodged at the level of the fourth rib. Dr. R. Graham Brown had passed the bronchoscope and had removed the foreign body from the right bronchus below the bifurcation of the trachea. The point of the needle was imbedded in the tracheal wall.

#### Large Dental Cyst.

Dr. R. GRAHAM BROWN showed a skiagram of a large dental cyst. It extended from the last molar tooth on the right side to the lateral incisor on the left side.

#### Medicine and the Law.

Mr. NEAL MACROSSAN, M.A., read a paper entitled "Medicine and the Law" (see page 447).

Dr. A. C. F. HALFORD thought that medical practitioners had an unfounded fear of the law. In regard to the disclosure of confidential information, he held that medical practitioners should not divulge facts ascertained in the course of their professional work, unless under the order of the court. They should not reveal secrets at the request of counsel. He would like to know whether a police magistrate or a justice of the peace was justified in giving an order for burial on the depositions of the police, when a medical practitioner was available. He considered that dying depositions were worthless.

Dr. J. A. CAMERON discussed the question of the degree of insanity in regard to the determination of the court when a plea of insanity was raised. He asked Mr. Macrossan whether the court would allow the fact that a person was insane on a particular point to influence its decisions in regard to whether a person was sane or insane.

Dr. L. M. McKILLOP related the history of a patient on whom he had operated. Several months later the patient showed signs of insanity. When questioning her, she had told him that she had strangled an infant thirty years before. He desired to know whether he should have included this statement in filling the certificate.

Dr. J. V. DUHIG stated that if a patient on whom criminal abortion had been performed, lived, it was not the duty of the doctor to assist in bringing the abortionist to justice. There was a hue and cry when the patient died. Was it not too late in these cases?

Dr. J. B. McLEAN referred to the cases of abortion in the Brisbane General Hospital. If he questioned the patients, he usually received lying answers. Should the practitioner in attendance notify the police if a patient became seriously ill? If it were the duty of the practitioner to inform the police in these cases, he thought that they should do so in all cases of abortion. Dr. McLean asked whether a man who committed a crime while in a state of drunkenness, had to bear the responsibility for the acts, notwithstanding the fact that from a medical point of view he had been temporarily insane.

Dr. GRAHAM BUTLER thought that it was regrettable that the medical profession was so isolated and self-centred. Medical practitioners did not enter into the by-ways of life, as the lawyer did. In referring to the subject of criminal abortion, he pointed out that books like that of Stopes, were on sale everywhere; even at church book depôts. If conception could or should be prevented, why should abortion be illegal? The probable answer he would

receive would be that it was a menace, because those performing it did so against the law and against the moral code. In regard to professional evidence, he stated that bias in evidence was due to the fact that a medical practitioner was called by the one or other side. To overcome this, expert witnesses should be called by the judge and should be paid by the country.

Mr. MACROSSAN, in reply, said that there was no legal duty on any person to act as informer. Whether there was a moral duty or not, must be left to the individual. In regard to criminal abortion, the evidence of an accomplice was admissible, but it must be corroborated in material particulars by other evidence. It was very difficult to get a conviction for criminal abortion. This was largely due to the sympathy of juries for this variety of crime. In the case of evidence of insanity, it was the function of the jury alone to decide. Juries were the sole arbiters in regard to questions of fact, while the judge determined questions in law. Mr. Macrossan said that in criminal cases, when there was a delusion on a particular subject and the delusion was relevant to the crime, it was taken into consideration.

Privileged evidence, as a rule, was not taken in writing; but this depended on the judge. All evidence in court was privileged and could not be the subject of a future action for defamation, except in cases of perjury. Dying depositions were taken on oath under special circumstances. The belief that death was imminent was not necessary. If the person died, the deposition could be used as evidence. Dying declarations were not given on oath. Any person who believed that he was in imminent danger of death, could make a statement. After death the statement was admissible as evidence against the person accused. A justice of the peace was not bound to hold an inquiry into the cause of death in any given case; he could issue an order for burial without holding an inquiry.

The President, Dr. GRAHAM BUTLER, thanked Mr. Macrossan on behalf of the members of the Branch for his interesting paper.

### MEDICO-POLITICAL.

A MEETING of the Western Australian Branch was held at the Perth Hospital on October 19, 1921, Dr. G. W. BARBER, C.B., C.M.G., D.S.O., the President, in the chair.

#### War Patriotic Fund.

A letter was read from the Secretary of the War Patriotic Fund, intimating that the fund was to be closed.

Dr. J. K. COUCH moved that the rates for attendance on members of the Fund be as follows:

Consultation at house or visit..	7s. 6d.
Night visit ..	10s. 6d.
Specialist's fee ..	£1 1s. 0d.

The motion was seconded by Dr. D. M. McWHAE, C.M.G., C.B.E., and was carried.

#### Reorganization of the Australian Army Medical Service.

A letter was read from the Honorary Secretary of the Federal Committee, conveying the following resolution of the Federal Committee:

That there be one medical service to provide the medical needs of the Navy, the Army and the Air Force, under one Director-General of Medical Services responsible to a Minister.

It was moved by Dr. D. M. McWHAE, seconded by Dr. W. J. BEVERIDGE and carried that the proposal be adopted.

#### Annual Subscription.

Dr. W. TRETHOWAN moved:

That Rule 9 of the Rules and Regulations be cancelled and the following be substituted in lieu thereof:

"The subscription for each member of the Branch shall be £4 4s. for town members residing in the metropolitan-suburban area; £3s. 3s. for

country members and £2 2s. for junior resident medical officers at public hospitals.

"Subscriptions are payable in advance and shall entitle each member to the privileges of membership of the British Medical Association and to receive the *British Medical Journal* and *THE MEDICAL JOURNAL OF AUSTRALIA* for the current year.

"Subscriptions are to date from and to be considered due on the first of January in each year, except in the case of members admitted on or after the first of July, when the subscription payable in advance shall be half the ordinary rates."

The motion was seconded by Dr. D. P. CLEMENT.

Dr. W. J. BEVERIDGE moved an amendment to the effect that the subscription for town members be £4 4s. and for country members and resident medical officers be £3 3s..

The amendment was seconded *pro forma* by Dr. M. K. MOSS.

On being put to the meeting the amendment was lost.

Dr. J. E. RAMSAY suggested an annual subscription for town members of £5 5s.. This proposal met with no support.

The motion of Dr. TRETHOWAN was put to the meeting and carried.

#### Friendly Society Lodge Practice.

A conference had been held with the Friendly Societies' Council on October 18, 1921, at which the question of the lodge agreement between medical officers and the Swan District Friendly Societies' Association had been discussed. This association and the medical officers had agreed to the adoption of the following addendum:

(a) Hours of Attendance.—All calls necessitating visits by the doctor between the hours of 7 p.m. and 7 a.m. to be chargeable to the member at ordinary private rates; such fees to be collected by the doctor from the member. From 1 p.m. Saturdays to 7 a.m. Mondays all consultations and calls to be chargeable as above.

The Friendly Societies' Council had objected to this addendum and had appealed to the Branch not to endorse it.

THE PRESIDENT explained that the Friendly Societies' Council held that the alteration embodied in the addendum would bring the attendance below the minimum laid down in the Model Agreement.

Dr. E. H. CLARKE thought that they should be guided by the fact that both the Swan District Friendly Societies' Association and its medical officers were agreeable to the proposal. It appeared to him that the metropolitan lodges were attempting to prevent its adoption.

Dr. E. A. OFFICER pointed out that they should consider the friendly societies' interests in the agreement.

Dr. J. J. HOLLAND moved and Dr. D. M. MCWHAE seconded:

That the delegates to the next conference be instructed to the effect that the arrangements made by the medical officers with the Swan District Friendly Societies' Association be not interfered with, it being considered that this is not below the minimum as laid down by the Model Lodge Agreement.

Dr. J. E. F. STEWART expressed the opinion that the arrangement, which had been in force since 1917, was satisfactory and he thought that it should not be disturbed.

Dr. D. P. CLEMENT suggested that a permanent committee be appointed to discuss with the Friendly Societies' Council the various matters in dispute.

Dr. R. C. MERRYWEATHER held that it was unfair for medical officers to claim extra payment from lodge members for night or week-end visits.

Dr. W. TRETHOWAN disapproved of the proposal to limit lodge attendance to specified times.

Dr. J. E. RAMSAY and other members spoke in favour of the motion, which was carried.

Dr. J. J. HOLLAND proposed that Dr. W. J. BEVERIDGE, Dr. E. C. EAST and Dr. J. E. F. STEWART be appointed the delegates for the ensuing twelve months to confer with the Friendly Societies' Council. The suggestion was adopted.

#### NOMINATIONS AND ELECTIONS.

THE names of Dr. ESME VIVIENNE ANDERSON and Dr. JOHN HERBERT BODY were included in the list of newly-elected members of the Victorian Branch of the British Medical Association published last week. Through an oversight it was omitted to specify that their membership would commence as on January 1, 1922.

#### CORRIGENDUM.

To the report of a case of intra-cranial tumour by Dr. T. H. R. MATHEWSON, published in *THE MEDICAL JOURNAL OF AUSTRALIA* of November 5, 1921, the addendum, comprising a pathological report, should have been described as from the Pathological Laboratory of the Department of Mental Hospitals, New South Wales. The illustrations are from photographs by Dr. EVAN JONES.

#### POST-GRADUATE COURSE IN SYDNEY.

ABOUT a year ago the Dean of the Faculty of Medicine of the University of Sydney suggested to the Council of the New South Wales Branch of the British Medical Association that a committee be appointed to draft proposals for the holding of post-graduate courses. The matter was referred to the appropriate Committee of the Council and in due course a scheme was prepared and submitted to the Faculty of Medicine. This scheme received the approval of the Faculty and of the Senate of the University. The Senate thereupon instructed the Sydney University Extension Board to make the necessary arrangements for a course to be held in January, 1922.

We have been asked to announce that arrangements have been made to hold the post-graduate course from January 9 to January 20, 1922. The lectures and demonstrations will be given at the Royal Prince Alfred Hospital, the Sydney Hospital, the Children's Hospital and the Women's Hospitals. The subjects to be dealt with are as follows: (i.) Cardio-vascular diseases, (ii.) respiratory diseases, (iii.) acute abdominal diseases, (iv.) medical diseases of children, (v.) diseases of the digestive system, (vi.) operative surgery of the large bowel, (viii.) acute pelvic affections, (ix.) fractures, (x.) modern aspects of urology, (xi.) prematurity, (xii.) maternity, (xiii.) diseases of the blood, (xiv.) ear, nose and throat, (xv.) the feeding of infants, (xvi.) tuberculosis, (xvii.) anaesthetics. Demonstrations will be given in the wards and operating theatres of the several hospitals and in the Pathological Department at the University. A complete programme will be issued at a later date.

#### Medical Societies.

##### THE MEDICAL SCIENCES CLUB.

A MEETING of the Medical Sciences Club of South Australia was held at the University of Adelaide on August 5, 1921.

##### Fusion Sense and Binocular Vision.

Dr. R. H. PULLEINE drew attention to some phenomena dependent upon binocular vision which were not usually apprehended. A large part of the total field of vision was actually monocular and the proportion of monocular vision was increased when the eyes were prominent and decreased when they were deeply sunken. The diplopia in planes other than the plane of convergence was eliminated by the "fusion sense," which also eliminated imperfections of binocular vision due to the admixture of monocular field, slight inaccuracies of convergence and so forth. The fusion sense was readily disturbed by interference with the normal correspondence of vision in the two eyes, as by causing one eye to view the field through red and the other through blue glass. Advantage was taken of this in the near vision phorometer. By its means slight defects

of convergence were readily demonstrable, which would be imperceptible in the fusion sense were active.

Dr. W. RAY drew attention to the utilization of the fusion sense in the stereoscopic X-ray screen, an arrangement by which the rays from two X-ray tubes placed in the relative positions of the eyes were alternately thrown upon a fluorescent screen at the rate of 200 alternations per second. The fusion sense of the observer created a stereoscopic picture of the shadows thrown upon the screen.

PROFESSOR J. B. CLELAND and others drew attention to the fact that if in the use of a microscope the unaccustomed eye was employed, illumination appeared to be much enhanced, but definition was correspondingly poor.

#### Head Nystagmus.

PROFESSOR T. BRAILSFORD ROBERTSON demonstrated head nystagmus consequent upon sudden interruption of rotation in the sleeping lizard (*Trachysaurus*). This animal exhibited an unusually decided reaction and secondary oscillations due to oscillations of the endolymph set up by reflection from the containing surfaces were readily perceptible.

Dr. R. H. PULLEINE pointed out that head nystagmus was frequently seen in babies; but rarely or not at all in adults.

#### Sea-Sickness.

A discussion of the origin of sea-sickness followed, in the course of which Dr. H. K. FRY drew attention to the fact that the various symptoms corresponded to those arising from stimulating of the vagus.

In connexion with the alleged relative immunity of smokers, Dr. PULLEINE pointed out that very heavy smokers frequently exhibited a toxic labyrinthitis and yielded little reaction to rotation.

#### Plague of Mice in Australia.

Dr. GILBERT BROWN exhibited a remarkable series of photographs illustrating the devastation caused by the late plague of mice in Australia. Huge wheat stacks were shown reduced to a heap of refuse within six weeks. One neighbour of his collected carcasses of twenty-eight thousand mice as a result of spreading a bushel of poisoned wheat in his garden. The appearance and disappearance of the plague were equally and remarkably sudden.

PROFESSOR J. B. CLELAND pointed out that the plague of mice occurred simultaneously in many parts of Australia and could not therefore have been attributable to migration. The species involved had been definitely shown to be the ordinary house mouse (*Mus musculus*).

A FURTHER meeting of the Medical Sciences Club was held on September 9, 1921.

#### Pituitary Gland and Anencephalic Fœtus.

Dr. BARLOW reported that the pituitary gland had been stated by a recent author to be absent in the anencephalic fœtus and that other abnormalities of the fœtus, such as enlarged thymus, diminished growth and excess of fat, had been attributed to the absence of the hormones derived from this gland.

Dr. Barlow had examined three specimens of anencephalic fœtus which had been presented in the pathological museum of the Adelaide Hospital. In each he found a pituitary gland with anterior lobe tissue, but the posterior lobe was absent. In each case the anencephalic condition was typical. The cerebrum and cerebellum were absent; there was no *pons varoli*. The *medulla oblongata* spread over the upper surface in the position which should have been occupied by the cerebrum.

Dr. W. RAY reported a case in which the effect of morphine had been tested upon an anencephalic monster. A dose of 0.075 gramme had been administered without effect. The fœtus had lived for an unusually long time after delivery.

PROFESSOR J. B. CLELAND drew attention to an article in THE MEDICAL JOURNAL OF AUSTRALIA which appeared to imply that congenital defects were usually due to syphilis. It had been inferred that, because no diminution of congenital deformities had occurred within recent years, the anti-venereal campaign had not succeeded in its object.

Dr. RAY mentioned a case in which an anencephalic monster had been delivered, while subsequently the same

mother gave birth to a healthy child and later to perfectly healthy twins.

Dr. RAY AND Dr. H. SWIFT had also met with cases of patent *ductus arteriosus* in which no suspicion of syphilis could be entertained.

Dr. C. T. TURNER reported a case in which in one hand the thumb and index fingers were fused, in the other hand the index finger was missing; there were two club feet, a cleft palate and a hare lip. The subject was not syphilitic.

#### Horseshoe Kidney.

PROFESSOR J. B. CLELAND reported two cases of horseshoe kidney associated with remarkable obesity.

#### Refractometric Method of Estimating Globulins and Albumins.

PROFESSOR T. BRAILSFORD ROBERTSON described the refractometric method of estimating the proportion of globulins and albumins in very small quantities (1.5 c.cm.) of blood serum. The method had shown that a high proportion of globulin was associated with infection. In the Dermatological Laboratories at the University of Pennsylvania it had been shown that the fall in the proportion of globulins might be employed as a measure of the success of parasitidal medication in syphilis.

The origin of the increase in globulins was not as yet known. It was not proportional to nor even necessarily associated with the development of immune bodies. It was not due to leucocytosis. The possibility that an alteration of the permeability of the blood vessel walls might be the origin of the change was indicated.

The employment of the method in the investigation of the globulin-albumin ratio in erythematous diseases was suggested.

Dr. TURNER also suggested the investigation of the ratio in cases of diphtheria antitoxin rashes.

A discussion followed regarding the origin of antitoxin rashes and other undesirable symptoms following upon administration of diphtheria antitoxin.

## Hospitals.

### THE WOMEN'S HOSPITAL, CROWN STREET, SYDNEY.

THE twenty-fifth annual report of the Women's Hospital, Sydney, for the year 1920 reveals that the utility of this institution has increased quite considerably. Any woman unable to obtain or to pay for the necessary treatment at home during her accouchement is eligible for indoor or outdoor aid from the hospital. In-patients are expected to contribute according to their means towards their support while in the hospital. Indigent patients are admitted on the order of the Government Medical Officer.

#### Maternity Statistics.

On January 1, 1920, 50 women were in the Crown Street Hospital. During the course of the twelve months, 1,466 patients were admitted. Of these, 1,422 were discharged and 21 died. This yields a gross mortality of 1.51%.

In the Indoor Maternity Department, 899 women were delivered naturally, 16 were delivered by Cæsarian section and 10 were admitted after delivery on account of some complication. In addition to these 925 patients, there were admitted 98 women not in labour and 37 pre-maternity patients who were discharged undelivered. The number of deaths was 11, which would represent 1.18% of the 925 patients referred to above. The morbidity works out at 17.09%.

The youngest patient delivered was 14 years of age. No less than 66 girls under 17 years were confined in the hospital. There were 28 women of 47 years. Of the 899 patients, 372 were primiparae. There were six who had had nine previous pregnancies, four who had had ten, two who had had eleven, one each who had had twelve and thirteen, two who had had fourteen and one each who had had fifteen and sixteen.

Of the complications, albuminuria occurred 83 times, ante partum eclampsia three times, post partum eclampsia six times, placenta prævia nine times, gonorrhœa twenty-



one times, *ante partum* hæmorrhage seven times and *post partum* hæmorrhage 35 times.

The number of infants born was 922. Of these, 108 were premature. The number of still-born children was 31, while three macerated fetuses were included in the list. There were thus 799 full-time and 87 premature infants born alive. Of these, 39 died before the discharge of the mothers from the hospital. This represents a mortality of 4.4%. Sixteen of the babies died of prematurity, six of congenital heart disease and two of convulsions. Of considerable hygienic importance is the fact of 20 of the children suffering from *ophthalmia neonatorum*, while seven suffered from conjunctivitis of other causation.

#### District Maternity.

The total number of women attended from the District Maternity Department in their own homes was 248. The number of accouchements was 214. There was no maternal mortality. Six of the patients had fever of sufficient degree to be regarded as morbid. The complications included two of albuminuria, three of *ante partum* hæmorrhage, eleven of *post partum* hæmorrhage and fourteen of ruptured perineum. Of the 218 infants born, five were still-born and seventeen were premature. Six of the infants died during the attendance on the mother, which represents a mortality of 2.79%.

In the Hugh Dixon Isolation Department, 188 women were treated with nine deaths. In the Gynæcological Department, 195 women were treated and one died. It is stated that 151 were discharged cured, 25 were relieved and 11 refused operation.

## Public Health.

### THE PLAGUE OUTBREAK.

BULLETIN Nos. 13 and 14 have been issued by the Federal Department of Health on November 4 and 11, 1921, respectively. The following is a summary of the more important information contained in these Bulletins:

#### Shipping Arrangements.

Arrangements for the fumigation, inspection and control of steamers running from Brisbane to the rivers of the North Coast of New South Wales have been completed. A thorough fumigation of the empty vessels is to take place at Brisbane. The loading is to be conducted under the supervision of the officers of the Commonwealth Health Department, who will insist on the adoption of all proper precautions. A medical inspection will be carried out before each ship leaves Brisbane. Sulphur and pans are to be placed on board at Brisbane, so that a second fumigation may be carried out after the vessel is emptied at Lismore. A medical inspection is carried out at Ballina. The officers of the Commonwealth Health Department and of the local health authority will co-operate in the inspection at each port. Should plague appear either among passengers or members of the crew or among rodents aboard, the vessel will be ordered back to Brisbane into quarantine. The local health authorities are required to clean up all wharves and sheds at the ports and to maintain them in as clean and as rat-free a condition as possible.

Special instructions have been issued in regard to the measures to be adopted to prevent rat migration by rail at Tweed Heads.

#### Plague in Man.

Up to November 5, 1921, the total number of cases of plague in human beings notified was 55, including one suspicious case at Innisfail. The number of deaths is given at 29. There were 23 cases and 14 deaths at Townsville, exclusive of the Cooktown case, in which the infection probably took place in Townsville. In Brisbane there were 17 cases, with 9 deaths, and in Cairns there were 12 cases, with 6 deaths. One non-fatal case was notified in Port Douglas.

During the fortnight ended November 5, 1921, nine additional cases were notified in Brisbane. Of the patients there were seven males, including one Chinaman, varying in age between 12 and 71 years, and one single female, aged 42 years. On November 5 there were still seven patients under treatment at the Wattlebrae Isolation Hospital. Only one patient was discharged during the fortnight.

At Townsville nine persons suffering from plague were isolated and two in whom the diagnosis was made on clinical grounds during the fortnight ended November 5, 1921. The bacteriological examination did not confirm the clinical diagnosis in the case of one patient, a female infant, aged 20 months. One patient committed suicide.

At Cairns a man, 63 years of age, was found to be suffering from plague on November 4. The diagnosis was confirmed at the Commonwealth Laboratory, Cairns.

Smears from a patient in Port Douglas were examined on November 4, 1921, and the presence of *Bacillus pestis* was determined. Similarly, the infection in the boatswain of the *Kuranda*, who arrived at Cooktown from Townsville, was proved to be plague.

#### Plague in Animals.

During the fortnight ended November 5, 1921, 3,514 rodents were examined in Brisbane and 29 were found to be infected. Three of the animals were mice. Of 17 cats examined during the same period, one was found to be infected. It is reported that two infected guinea-pigs had died at the Military Remount Depot at Enoggera.

From Townsville 39 smears taken from rodents were sent for examination. In nine *Bacillus pestis* was recognized. Eight rats were examined at the Institute of Tropical Medicine and one of them proved to be infected. In Cairns during the fortnight smears from 23 rats revealed infection in three. A fourth infected rat was discovered at a wharf and the infection was proved bacteriologically.

Of 22 rats examined at Maryborough, one proved to be infected, while in the Hinchinbrook Shire one rat out of 54 harboured the bacilli.

Considerable activity in the catching of rats was exhibited in Sydney. On November 2 four rats from a store in Sussex Street were found to be infected. On the 4th, 5th, 7th and 8th further infected rats were detected at the same store, the total number being fifteen. It appears that the business conducted in the store is chiefly in bacon and eggs. The bacon is imported green in bags and is cured at the store in Sussex Street. The eggs are sent in kerosene cases with cardboard divisions. Some of the cases arrived broken at the corners. The firm owning the store has another store in Brisbane. No infected rats have been found at the Brisbane store, but infected rats were taken from the adjoining premises. The partition between the two stores is described as partial.

No infected rats were found among those examined in Western Australia and in Tasmania.

#### CONFERENCE OF EXPERTS.

At the instigation of the Minister of Health for the Commonwealth, a conference of the medical officers in charge of the State Health Departments with the Director-General of Health for the Commonwealth and some of the Chief Quarantine Medical Officers was held in Sydney on November 14, 1921, and the following days. A statement of the determinations of the conference will be published in a subsequent issue.

#### FURTHER ACTION DESIRED.

On November 11, 1921, the Council of the Queensland Branch of the British Medical Association, after full consideration of the position, addressed a letter to the Home Secretary, pointing out that the accommodation in hospital for male patients suffering from plague was inadequate, that the accommodation for the nursing staff was insufficient, that there was no provision for the treatment of persons suffering from the pneumonic form of plague, that there was no provision to enable convalescents to remain separated from persons in the acute stages of the disease, that suitable provision for the observation and isolation of suspects should be established and finally that arrangements should be made with medical practitioners who have especial experience of the disease, to be available for consultation purposes. The Council of the Queensland Branch of the British Medical Association has also drawn up a memorandum addressed to the Commissioner of Public Health, dealing with matters concerning which better co-operation and more efficient action were held to be desirable.

## Proceedings of the Australian Medical Boards.

### NEW SOUTH WALES.

THE following has been registered under the provisions of the *Medical Act, 1912 and 1915*, as a duly qualified medical practitioner:

LONG, WILLIAM HELLIER, M.B., Bac. Surg., 1921 (Univ. Melb.), Ardlethan.

### QUEENSLAND.

THE undermentioned have been registered, under the provisions of the *Medical Act of 1867*, as duly qualified medical practitioners:

DENT, ROWE CLYDE, M.B., Ch.M. (Univ. Syd.), 1918, Warwick.

MCCALLUM, FRANK, M.B., B.S., 1917; D.P.H. (Univ. Melb.), 1920, Brisbane.

WHITAKER, ROY HENRY ROLLINSON, M.R.C.S. (Eng.), L.R.C.P. (Lond.), 1901, Taroom.

### ANNUAL CONFERENCE OF THE SOCIETY OF DENTAL SCIENCE OF NEW SOUTH WALES.

THE second annual conference of the Society of Dental Science of New South Wales will be held at Miss Bishop's Hall, Elizabeth Street, Sydney, on November 21 and 22, 1921. The President and Council of the Society have extended an invitation to the members of the New South Wales Branch of the British Medical Association to be present at the conference.

## Medical Appointments.

DR. D. D. CADE (B.M.A.) has been appointed Acting Medical Superintendent of the Hospital for the Insane, Yarra Bend, Victoria, from November 8, 1921.

DR. G. G. NICHOLLS (B.M.A.) has been appointed Acting Medical Superintendent of the Hospital for the Insane at Ararat, Victoria, from November 3, 1921.

DR. H. ROGERSON (B.M.A.) has been appointed Acting Medical Superintendent of the Hospital for the Insane at Sunbury, Victoria, from October 17, 1921.

DR. THALIA E. ROCHE has been appointed Public Vaccinator at Dromana, Victoria.

DR. C. T. ABBOTT (B.M.A.) has been appointed Public Vaccinator at Murtoa, Victoria.

DR. R. H. MORGAN (B.M.A.) has been appointed a Justice of the Peace for the Wellington Magisterial District, Western Australia.

DR. R. H. M. CONNELL (B.M.A.) has been appointed District Medical Officer and Public Vaccinator at Wyalcatchem, Western Australia.

DR. J. R. LLOYD-JONES has been appointed Medical Officer of Health by the Norseman (Western Australia) Road Board.

## Medical Appointments Vacant, etc.

FOR announcements of medical appointments vacant, assistants, *locum tenentes* sought, etc., see "Advertiser," page xviii.

THE MEDICAL JOURNAL OF AUSTRALIA: Assistant Editor.  
NAUHU, CENTRAL PACIFIC: Assistant Medical Officer.  
UNIVERSITY OF ADELAIDE: Lecturers and Demonstrators in the Medical School.

## Medical Appointments: Important Notice.

MEDICAL practitioners are requested not to apply for any appointment referred to in the following table, without having first communicated with the Honorary Secretary of the Branch named in the first column, or with the Medical Secretary of the British Medical Association, 429, Strand, London, W.C.

BRANCH.	APPOINTMENTS.
NEW SOUTH WALES: Honorary Secretary, 30 - 34, Elizabeth Street, Sydney	Australian Natives' Association Ashfield and District Friendly Societies' Dispensary Balmain United Friendly Societies' Dispensary Friendly Society Lodges at Casino Leichhardt and Petersham Dispensary Manchester Unity Oddfellows' Medical Institute, Elizabeth Street, Sydney Marrickville United Friendly Societies' Dispensary North Sydney United Friendly Societies People's Prudential Benefit Society Phoenix Mutual Provident Society
VICTORIA: Honorary Secretary, Medical Society Hall, East Melbourne	All Institutes or Medical Dispensaries Australian Prudential Association Proprietary, Limited Manchester Unity Independent Order of Oddfellows Mutual National Provident Club National Provident Association
QUEENSLAND: Honorary Secretary, B.M.A. Building, Adelaide Street, Brisbane	Brisbane United Friendly Society Institute Stannary Hills Hospital
SOUTH AUSTRALIA: Honorary Secretary, 3, North Terrace, Adelaide	Contract Practice Appointments at Renmark Contract Practice Appointments in South Australia
WESTERN AUSTRALIA: Honorary Secretary, 6, Bank of New South Wales Chambers, St. George's Terrace, Perth	All Contract Practice Appointments in Western Australia
NEW ZEALAND (WELLINGTON DIVISION): Honorary Secretary, Wellington	Friendly Society Lodges, Wellington, New Zealand

## Diary for the Month.

- Nov. 22.—New South Wales Branch, B.M.A.: Medical Politics Committee; Organization and Science Committee.
- Nov. 24.—South Australian Branch, B.M.A.
- Nov. 25.—New South Wales Branch, B.M.A.
- Nov. 25.—Queensland Branch, B.M.A.: Council.
- Nov. 29.—Victorian Branch, B.M.A.: Ballot Papers Issued for Election of Office-Bearers.
- Nov. 30.—Victorian Branch, B.M.A.: Council.
- Dec. 6.—Victorian Branch, B.M.A.: Ballot Papers for Election of Office-Bearers returned.
- Dec. 6.—New South Wales Branch, B.M.A.: Ethics Committee.
- Dec. 7.—Victorian Branch, B.M.A.: Annual Meeting.
- Dec. 8.—Brisbane Hospital Clinical Society.
- Dec. 9.—Queensland Branch, B.M.A.: Annual Meeting.
- Dec. 9.—New South Wales Branch, B.M.A.
- Dec. 9.—Queensland Branch, B.M.A.: Council.
- Dec. 9.—South Australian Branch, B.M.A.: Council.
- Dec. 13.—Tasmanian Branch, B.M.A.: Meeting.
- Dec. 13.—New South Wales Branch, B.M.A.: Executive and Finance Committee.

## Editorial Notices.

MANUSCRIPTS forwarded to the office of this journal cannot under any circumstances be returned.

Original articles forwarded for publication are understood to be offered to THE MEDICAL JOURNAL OF AUSTRALIA alone, unless the contrary be stated.

All communications should be addressed to "The Editor," THE MEDICAL JOURNAL OF AUSTRALIA, B.M.A. Building, 30-34, Elizabeth Street, Sydney. (Telephone: B. 4635.)